



CITY OF ABERDEEN.



REPORT

BY THE

MEDICAL OFFICER OF HEALTH

FOR THE YEAR

1930



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P R E F A C E.

The following Report for 1930 on the Health and Sanitary Conditions of the City of Aberdeen is submitted in accordance with the requirements of the Department of Health for Scotland.

The population of Aberdeen for 1930, as estimated by the Registrar-General and including the inmates of Oldmill Hospital and Kingseat Mental Hospital, was 159,006, and the statistical rates throughout this Report are based on this figure. The population, as ascertained at the decennial census in 1931, was 167,259, showing an increase of 8,296 as compared with the 1921 census (158,963). Statistics for the year 1931 will, of course, be based on this figure.

During the year, the general death-rate was 13.1 per 1,000 of population, as compared with 15.2 in 1929, and 14.0 in 1928. This rate for 1930 is the lowest yet recorded, the next lowest being 13.3 in 1926.

The marriage-rate for 1930 was similar to that of the preceding year, namely, 9.8.

The birth-rate was 20.8 in 1930, which rate is 1.2 more than that of the previous year.

The infantile mortality rate throughout Scotland was 83 per 1,000 births in 1930. Among the principal towns in Scotland, Aberdeen appeared first on the list with an infantile mortality rate of 80. This is the lowest rate yet recorded in Aberdeen. In 1929 the rate was 95.

An epidemic of measles occurred during the last quarter of the year. The number of cases brought to the knowledge of the Health Department during that period was 2,389, and the number of deaths was 23, giving a death-rate of 1.0 per cent. The chief fatal complication in these cases was broncho-pneumonia.

Diphtheria cases were also above the average, 505 cases being notified in 1930, as compared with 399 during the preceding decennium. The case-mortality in 1930 was under the average, being 2.2, as against 4.8 in the preceding decennium.

A notable feature of the Report is the record of the invaluable work that has been carried out at the City Laboratory. Work of the highest scientific and

practical importance has been performed in connection with Puerperal Fever, Typhoid Fever, Pneumonia and Tuberculous Infection in Milk, and these subjects are dealt with in detail in Chapter I.

The original work of Dr. Smith on Puerperal Infections will do much to stimulate a new routine in midwifery practice, and it is needless to say how acceptable will be the introduction of any methods whereby Maternal Mortality will be lessened.

The special treatment of certain cases of Pneumonia in Woodend Hospital is proceeding, and what may prove to be a specific cure for a certain type of this disease will continue to be employed.

Much interesting information will be ultimately gleaned from the investigation of the incidence of tuberculosis in the milk supply of the country and the natural result will be an intensive effort by Local Authorities and producers alike to provide a tubercle-free milk to the community, and thus lessen the grave tuberculous disabilities that attack chiefly children whose staple diet is milk.

The Local Government (Scotland) Act came into operation on 16th May, 1930, and a brief statement as to the present position of re-organisation appears in Chapter II. A statement as to the Mental Health Services appears in this Report, but with regard to the School Medical Services a separate Report is being issued inasmuch as the school year ends at 31st July, and is therefore not coincident with the year as dealt with in the general Report.

HARRY J. RAE,

Medical Officer of Health.

August, 1931.

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CITY OF ABERDEEN

REPORT BY THE MEDICAL OFFICER OF HEALTH

For the Year 1930.

CHAPTER I.

1.—SPECIAL INVESTIGATIONS UNDERTAKEN DURING THE YEAR.

(1).—CAUSATION AND SOURCE OF INFECTION IN PUERPERAL FEVER.

A most valuable original contribution dealing with the Causation and Source of Infection in Puerperal Fever has been made by Dr. J. Smith, M.D., D.Sc., M.R.C.P. (London), D.P.H., City Bacteriologist.

In 1928 the Scottish Board of Health published a report by Dr. J. Parlange Kinloch, Dr. J. Smith, and Dr. J. A. Stephen, entitled "Maternity Mortality in Aberdeen, 1918-1927, with Special Reference to Puerperal Sepsis." The reporters concluded, *inter alia*, that in puerperal sepsis, as in other streptococcal diseases, the essential mode of infection is by contagion, the term "contagion" being understood to embrace all the channels by which any droplet or spray infection is spread; and that an important factor in contagion is a streptococcal carrier condition in physicians, nurses, or patients.

The Department of Health for Scotland have published a report by Dr. Smith on a routine bacteriological investigation of 221 cases of puerperal fever and 25 cases of septic abortion occurring in Aberdeen over a period of eight years, and an inquiry into the source of infection in 18 cases of puerperal fever and 3 cases of septic abortion.

For eight years all cases of puerperal fever admitted to the Aberdeen City Hospital have been made the subject of a routine bacteriological investigation. Blood and uterine cultures were made and any pus obtained was examined. The

organisms secured were identified by the usual morphological and cultural tests, and when necessary the haemolytic activity was examined after growing in 10 per cent. horse serum broth for eight hours at 37° C.

Of 196 cases the infecting organism was found to be *Streptococcus haemolyticus* alone in 120 cases, and *S. haemolyticus* with other organisms in a further 29 cases. Three cases had sterile uterine swabs, and the remaining 44 showed *Bacillus coli*, *B. proteus*, staphylococci, gonococci, pneumococci, diphtheroids, and *S. viridans*, alone or in various combinations. The blood cultures from 177 cases showed *S. haemolyticus* alone in 40, *B. coli* in 2, and *S. viridans*, *B. alkalescens*, pneumococcus (Type IV.), and *Staphylococcus aureus* in one each. Pus from 44 cases showed *Streptococcus haemolyticus* alone in 36 and the same organism with staphylococci in 3, with *B. coli* in 1, and with both *B. coli* and *S. viridans* in 1. Of the 3 remaining, 2 showed staphylococci only and the other *B. faecalis alkaligenes*.

Thus, 76 per cent. of cases showed *S. haemolyticus* in the uterine; 22·9 per cent. showed it in the blood, and of those with secondary suppurative processes 93·4 per cent. showed it in the pus. Of the 46 cases with a fatal issue, 34 were infected with the haemolytic streptococcus and 11 had sterile blood cultures; but of the latter, 6 yielded the organism *post mortem*. In 43 out of the 46 cases it was obtained from one source or another.

Of 24 cases of septic abortion, 4 died; the uterine cultures in 11 cases showed *S. haemolyticus* alone, in 3 more the same organism with others, and various other organisms in 11.

There can, therefore, be no doubt in the present series of the rôle played by *S. haemolyticus*.

SOURCE OF THE ORGANISM.

In this investigation, as soon as *S. haemolyticus* was found in a uterine culture, the various secretions and mucous membranes of the patient were examined, and throat and nose swabs were obtained from any persons who had been present at the confinement. When the uterine solution showed *B. coli*, specimens were obtained from the patient, but not from the attendants. The materials were cultured directly on sheep's-blood agar plates and in sheep's-blood broth. If the initial plates did not show the organism after incubation at 37° C. for 24 hours, the blood-broth cultures were also plated in blood-agar. The strains were then examined for their haemolytic activity and their action in carbohydrate media. To prepare agglutinating sera numerous rabbits were immunised with killed strains of *S. haemolyticus* and *B. coli*. Complete serological identification of the strains was established.

The report gives details of the examination in each of 21 cases, 18 of them being puerperal fever and 3 being septic abortion. The cultural characteristics

of all strains of *S. haemolyticus* were fully investigated and the results are given in the following table:—

Case	Disease	Infecting organism	Source of organism with serological characteristics identical with uterine strains
1	S.A.	<i>S. haem.</i> and <i>B. coli.</i>	<i>S. haem.</i> from patient's nose, and <i>B. coli</i> from patient's intestines.
2	P.F.	<i>S. haem.</i>	Nose of nurse.
3	"	Do.	Throat of doctor.
4	"	<i>S. haem.</i> and <i>B. coli.</i>	<i>S. haem.</i> from doctor's throat, and <i>B. coli</i> from patient's rectum.
5	"	<i>S. haem.</i>	Both from throat of same nurse.
6	"	Do.	Do. do.
7	"	Do.	Nose and throat of student.
8	"	Do.	Not determined.
9	"	Do.	Infection of nail-bed of doctor's thumb.
10	"	Do.	Not determined.
11	"	<i>B. coli</i> only.	Patient's urinary tract.
12	"	<i>S. haem.</i>	Throat of nurse.
13	"	Do.	Doctor's throat.
14	"	<i>S. haem.</i> and <i>B. coli.</i>	<i>S. haem.</i> from doctor's throat and <i>B. coli</i> from patient's urinary tract.
15	"	Do.	Septic focus on patient's finger.
16	S.A.	<i>B. coli.</i>	Patient's intestinal excretion.
17	P.F.	<i>S. haem.</i>	Not determined.
18	"	Do.	Throat of nurse.
19	"	<i>B. coli.</i>	Patient's faeces
20	"	<i>S. haem.</i>	Throat of doctor.
21	S.A.	Do.	Do

S.A.—Septic abortion. P.F.—Puerperal fever. *S. haem.*—*S. haemolyticus*.

The majority of the strains gave the typical fermentation reaction, viz., acid in media containing saccharose, lactose and salicin, and no acid in media containing mannite, inulin and raffinose. Four strains from two sources produced no acid in lactose, but were otherwise similar to the rest in their sugar reactions. The coliform strains showed considerable variation in their action on saccharose, but otherwise were much alike in that they produced acid in lactose, salicin and dulcitate, and no change in adonite. In litmus milk they produced acid and clot, and they liquefied gelatin. They failed to grow in Koser's medium, produced indol but no methyl-carbinol, and in only one instance failed to give a positive methyl-red reaction. The cultural characteristics of the strains were, therefore, of only slight value in indicating the common source of their origin. A study was undertaken to determine the incidence of the various serological types, and the results showed very diverse strains of *S. haemolyticus* and of *B. coli*. The results are summarised in the above table.

Thus, in a group of 18 cases infected with *S. haemolyticus*, the source of infection was determined in 15, of which 13 were cases of puerperal fever and 2 were cases of abortion. Of the former the strains were found to come from an extrinsic source in 12, and in every case but one that source was the throat or nose of the doctor, student, or nurse in attendance. In only 1 case could the

infection be regarded as autogenous, and this patient was suffering from a streptococcal infection of the hand. In the two cases of abortion the source was extrinsic in one and intrinsic in the other, the organism being found in the doctor's throat in one case and in the patient's faeces in the other. Of the three cases of *B. coli* infection, two were puerperal fever and one an abortion with *B. coli* septicaemia. In one case of puerperal fever the organism was also found in the urine, and in the other case it was found in the faeces.

CONCLUSIONS.

1. *Source of Infection.*—The investigation brings out in a marked degree the importance of carriers in the spread of puerperal infection, carriers being usually free from any gross signs of disease. In the majority of cases under investigation the infection was carried by the physician or nurse who actually introduced the streptococcus in the course of examination or manipulation. In all of the 21 cases of puerperal sepsis the faeces and urine were examined and in no instance were haemolytic streptococci found. Haemolytic streptococci were demonstrated in throat and nose swabs from one patient, nine doctors and five nurses.

2. *Prophylaxis.*—The question of prophylaxis therefore concerns the control of carriers about whom very little is known. It is not feasible to recommend that all doctors and nurses attending maternity cases should have their throats and noses examined for haemolytic streptococci and that those who are found to harbour these organisms should desist from attending confinements. On the other hand, infection could be prevented if doctors, midwives and maternity nurses recognised the chief source of infection and took appropriate precautions.

In view of the results obtained in the course of the present investigation emphasis must be placed on adequate masking as not merely a desirable but an indispensable precaution in midwifery practice. Other precautions, however, also seem to be necessary. For example, the patient herself should be examined for septic foci and material should be submitted to bacteriological examination, and if the doctor has any significant septic foci, especially in the hands, he should also submit material for examination.

The results obtained have also application in the prevention of outbreaks of puerperal fever in maternity hospitals, and it is suggested that there should be definite bed isolation of patients in maternity wards by means of metal or glass screens interposed between patients. In other words, the ideal maternity home should be provided with a series of rooms or theatres in which labour manipulative interference and treatment can be conducted with modern aseptic surgical technique with the inclusion of adequate masking.

Dr. Smith's work is of the greatest value in connection with the control of puerperal sepsis, and copies of his work have been circulated amongst the practitioners in the City and in the neighbouring counties.

(2).—THE SEROLOGICAL DIAGNOSIS OF TYPHOID AND PARA-TYPHOID FEVERS.

The following report on The Serological Diagnosis of Typhoid and Para-Typhoid Fevers relates to an intensive investigation carried out by Dr. J. Smith during the year, and will be published in the Medical Press on an early date:—

INTRODUCTION.

Recent investigations on the antigenic structure of organisms belonging to the *Salmonella* group have suggested a reconsideration of the various factors which enter into and create difficulty in the serological diagnosis of typhoid and para-typhoid fevers. Dreyer *et al.* (1915, 1916, 1917), with a view to making the results obtained more uniform in character, introduced standardised suspensions; Felix and Mitzenmaeher (1918) demonstrated that bacteria of the typhoid-paratyphoid enteritidis group were possessed of the double type ("H" and "O") of receptors; Arkwright (1921) has shown that the antigens of smooth and rough variants are distinct both as regards their corresponding agglutinin and the kind of clumping produced by specific sera; Andrews (1922) discovered the diphasic phenomenon associated with certain members of the group; and finally, White (1926) has made extensive contributions to our knowledge of the antigenic structure of the *Salmonella* group as a whole.

In 1920 Weil and Felix discussed the principles of qualitative serum analysis in relation to the antigenic structure of organisms of the typhoid-paratyphoid group, and Felix (1924) suggested the qualitative method for the serological diagnosis of enteric fevers. Further results confirming and amplifying the original work have been published by Felix and Olitzki (1928) and Felix (1929, 1930), while the main principles involved in the method of diagnosis have received support from Burnet (1927), Stuart and Kirkorian (1928), Gardner (1929), Pijper (1930) and Whitehead (1930). On the other hand, Topley and Wilson (1929) deplore the fact that qualitative analysis of "H" and "O" agglutinin has tended to supersede the accurate quantitative estimation of these bodies.

In view of the fact that little work has been published on the practical application of these methods to the diagnosis of typhoid and para-typhoid fevers in this country, it was resolved to examine all sera submitted for the Widal reaction to a detailed analysis of their agglutinins, particularly for the "H" and "O" antigens of *B. typhosus* and *B. para-typhosus* B. These two organisms appear to be the main cause of enteric fever in the North of Scotland, since infection due to *B. para-typhosus* C. has never been encountered, and infection due to *B. para-typhosus* A. only in one instance and that in an Estonian seaman who had contracted the disease abroad.

METHODS.

Specimens of blood submitted for the Widal reaction were collected by medical practitioners and resident medical officers and sent to the Laboratory for examination. Apart from the specimens taken from patients within the municipal hospitals, the blood samples were mainly collected in Behring venules so that an ample supply of uncontaminated blood was obtained for the various agglutination tests and for culture of the blood clot. When received, samples of clotted blood were first centrifuged and the serum was then removed with a sterile pipette, and the remaining red blood cells and clot were then transferred to a flask containing 50 c.c. of sterile ox bile, which was placed in the incubator at 37° C.

From the bile culture medium samples were from day to day inoculated on to McConkey's bile salt lactose agar plates to determine the presence or absence of typhoid-paratyphoid organisms.

For the agglutination tests the macroscopic method was used. In the first instance, for each bacterial suspension used in the tests, 0.5 c.c. of a dilution of the patient's serum ranging from 1 in $12\frac{1}{2}$ to 1 in 3,200 were placed in Dreyer agglutination tubes, and thereafter 0.5 c.c. of the bacterial emulsion was added, the final dilutions thus ranging from 1 in 25 to 1 in 6,400. The results were checked by the use of saline and bacterial emulsion, and the tubes were incubated in the water bath at 52° C. for two hours before the readings were made of agglutination against "H" antigens, and at the end of a 4-hour period for agglutination against the "O" antigens. If the end titre of the serum for a particular organism was not determined by the first series of dilutions, then a further series was set up.

Most of the suspensions used in the tests were obtained from the Standards Laboratory, Oxford. Thus killed suspensions of *B. typhosus* "H" and "O," *B. para-typhosus* A, B, C, *Sal. aertrycke* and *B. enteriditis* "H" antigens were all obtained from this source. In addition living cultures of *B. typhosus* "H" (Felix 901) and *B. typhosus* "O" variant (Felix 901), *B. para-typhosus* B "H" (a specific form isolated locally), and *Sal. aertrycke* ("O" variant of Schutze, 1930) were obtained from the National Collection of Type Cultures, and finally a suspension of *B. para-typhosus* B "O" antigen was prepared by the method described by Gardner (1929). The normal strains of *B. typhosus* and *B. para-typhosus* B were grown on a nutrient agar medium containing 5% agar which had an almost semi-solid consistency, but the "O" variants of *B. typhosus* and *Sal. aertrycke*—the latter being used as a substitute for *B. para-typhosus* B "O"—were grown on the standard agar, all strains being sub-cultured daily.

RESULTS OF THE INVESTIGATIONS

During the past two years 264 specimens of blood have been submitted for the Widal reaction, and all these specimens have been examined in detail in regard to their agglutinin content for the "H" and "O" antigens of *B. typhosus* and *B. para-typhosus* B, but were also tested against the "H" antigen of *B. para-typhosus* A and *B. para-typhosus* C. In this paper only the agglutination results with *B. typhosus* and *B. para-typhosus* B will be discussed, since the amount of cross agglutination which occurred with *B. para-typhosus* A and C was insignificant. The results can be separated into various groups; firstly, those obtained with the sera of definite cases of typhoid fever; secondly, those obtained with sera from cases of para-typhoid; thirdly, those obtained with sera from inoculated individuals; and, fourthly, results of doubtful significance. It should be noted that for diagnostic purposes agglutination with the "H" antigens in a dilution of the serum of 1 in 50 was regarded as being suspicious of a present or past infection or previous inoculation, and if the blood culture did not show any organism a further specimen of blood was requested, while agglutination in a dilution of 1 in 100 was regarded as definitely diagnostic unless contra-indicated by a history of past infection or by previous prophylactic inoculation. With the "O" antigens agglutination in a dilution of 1 in 100 was considered necessary for diagnostic purposes.

The diagnostic results of these tests are given in Table I., where it will be seen that 28 sera only were obtained from cases of typhoid fever, 42 from cases of para-typhoid fever, and 17 from inoculated individuals, while 10 sera showing minor amounts of agglutinins were obtained from patients who were later proved to be suffering from other diseases, and finally 168 sera which gave totally negative results.

TABLE I.—RESULTS OF AGGLUTINATION TESTS FROM THE CITY OF ABERDEEN
AND THE VARIOUS COUNTIES, 1929-1930.

District	Number of sera from cases of Typhoid Fever.	Number of sera from cases of Paratyphoid Fever.	Number of sera from Inoculated Patients.	Sera giving doubtful results.	Number negative.
City of Aberdeen	13	19	13	6	101
Banffshire	0	4	3	0	14
Moray and Nairn	3	3	0	0	9
Kincardine	0	0	0	1	4
Ross and Cromarty	0	2	0	0	11
Caithness	3	2	0	0	12
Orkney	0	9	0	1	8
Shetland	9	3	1	1	9
	28	42	17	9	168

AGGLUTINATION TESTS IN 28 CASES OF TYPHOID FEVER

The results of these tests and of other bacteriological findings in these 28 cases are given in Tables II. and III. respectively. The end titres of the serum is given in each case for the "H" and "O" antigens of *B. typhosus* and *B. Para-typhosus* B. The number of agglutinin units has also been calculated with the exception of those for *B. para-typhosus* B "O" antigen which was not obtainable from the Standards Laboratory, Oxford. In the majority of cases the agglutinin content of the sera definitely indicated the nature of the infecting organism, and in 20 cases the titre of the sera for the "H" antigen was greater than for the "O" antigen, and was manifest in a dilution of 1 in 100 or higher, while in 2 cases (Nos. 5 and 15) the actual titres of the sera were the same for both "H" and "O" antigens, but when the number of agglutinin units were determined there was a larger number of units for the "H" antigen. In 1 case (No. 11) in which a positive blood bile culture was obtained, the agglutination results were entirely negative. In 3 cases (Nos. 6, 7 and 25) the only agglutination was 1 in 25, 1 in 100 and 1 in 50 against *B. typhosus* "O" antigen. The blood specimens from cases 6 and 7 were just sufficient for the Widal reaction, and were taken in the second and third days of the disease. These cases were clinically diagnosed early on account of the fact that they were directly associated with a known typhoid carrier, and the subsequent course of the illness, despite the lack of bacteriological findings, left no doubt as to the disease from which the patients suffered. In case 25 the blood sample was also taken on the third day of the illness, and the serum was found to agglutinate only *B. typhosus* "O" in a dilution of 1 in 25, but the blood culture showed the presence of *B. typhosus*. Finally, in 2 cases (Nos. 10 and 12) the titres of the sera were higher for the "O" antigen than for the "H" antigen, and in 7 cases there were no "O" agglutinins present at the time of examination.

In order to examine the fluctuations in the titre of sera, repeated blood samples were obtained from 9 cases and the results are given in Table IV. As a rule the first specimen was taken directly on admission to hospital, and the subsequent samples during convalescence. Eight cases showed agglutinins for "H" antigen on admission and 7 for the "O" antigen, while during convalescence all showed agglutinins for both "H" and "O" antigens. One case, which gave a negative Widal to begin with, developed "O" agglutinins first but later the titre for the "H" antigen became much higher than for the "O." In Tables II. and III. are given also the cross agglutination results of the various typhoid sera with the antigen of *B. para-typhosus* B. the results however show that no difficulty was encountered in making a diagnosis on account of group agglutinins.

TABLE II.—TYPHOID FEVER.—AGGLUTINATION TESTS WITH OXFORD STANDARD AGGLUTINABLE SUSPENSIONS *B. PARATYPHOSUS* B "O" ANTIGEN EXCEPTED.

Case.	<i>B. Typhosus.</i>				<i>B. Paratyphosus</i> B.		
	H Antigen.		O Antigen		H Antigen.	O Antigen.	
	Titre.	Aggn. Units.	Titre.	Aggn. Units.	Titre.	Aggn. Units	Titre.
1	100	13	0	0	0	0	0
2	3,200	444	400	40	400	14	0
3	800	111	0	0	0	0	0
4	25	3	50	5	0	0	0
5	200	31	200	20	0	0	0
6	0	0	25	25	0	0	0
7	0	0	100	10	0	0	0
8	200	31	25	25	0	0	0
9	6,400	100	50	5	100	31	0
10	50	7	200	20	0	0	0
11	0	0	0	0	0	0	0
12	200	32	800	100	0	0	0
13	51,200	8,255	25	3	100	50	25
14	1,600	228	400	50	25	5	100
15	200	28	200	25	0	0	200
16	1,600	228	400	50	50	10	100
17	100	28	50	6	0	0	0
18	12,800	1,828	50	6	0	0	0
19	200	28	100	12	0	0	0
20	200	32	0	0	25	7	0
21	800	129	200	20	0	0	0
22	400	64	200	20	0	0	0
23	800	129	100	10			
24	200	31	800	80	0	0	100
25	0	0	50	5	0	0	0
26	6,400	914	0	0	1,600	320	50
27	100	14	0	0	0	0	0
28	100	14	0	0	0	0	0

Associated Cases Bracketed.

TABLE III.—TYPHOID FEVER.—BACTERIOLOGICAL FINDINGS.

Case.	Cultural Results.		
	Blood.	Urine.	Fæces.
1	+	—	+
2	—	—	+
3	—	+	+
4	+	+	+
5	—	—	—
6	0	0	0
7	0	0	0
8	0	0	0
9	+	0	0
10	+	0	0
11	+	0	0
12	—	+	+
13	+	—	+
14	+	—	+
15	—	+	+
16	+	+	+
17	+	0	0
18	+	0	0
19	+	0	0
20	—	0	—
21	+	0	0
22	+	0	0
23	—	0	+
24	—	0	0
25	+	0	—
26	—	0	—
27	—	0	—
28	—	0	—

Associated Cases Bracketed.

+ = positive culture.

— = negative culture.

0 = no specimen.

TABLE IV.—TYPHOID FEVER.—REPEATED AGGLUTINATION TESTS WITH SERA FROM PATIENTS.

Case.	Test.	B. Typhosus.				B. Paratyphosus B.		
		H Antigen		O Antigen.		H Antigen	O Antigen	
		Titre.	Aggn. Units.	Titre	Aggn. Units.	Titre.	Aggn. Units.	Titre.
1	{ 1	100	13	0	0	0	0	0
	{ 2	800	111	400	40	0	0	0
2	{ 1	3,200	444	400	40	400	129	0
	{ 2	3,200	444	400	40	400	129	0
3	{ 1	800	111	0	0	0	0	0
	{ 2	200	30	100	10	0	0	0
4	{ 1	25	3	50	5	0	0	0
	{ 2	100	15	400	40	0	0	50
5	{ 1	200	31	200	20	0	0	0
	{ 2	200	31	200	20	0	0	0
11	{ 1	0	0	0	0	0	0	0
	{ 2	0	0	200	20	0	0	0
	{ 3	800	111	100	10	0	0	0
13	{ 1	51,200	8,255	25	3	100	50	25
	{ 2	800	129	50	6	0	0	25
15	{ 1	200	28	200	25	0	0	200
	{ 2	50	7	50	6	0	0	0
16	{ 1	1,600	228	400	50	50	10	100
	{ 2	3,200	457	400	50	0	0	100

AGGLUTINATION REACTIONS IN PARA-TYPHOID FEVER.

In all, blood specimens were obtained from 42 known cases of para-typhoid fever, and the agglutination results are given in Table V. On the average, the titres of the sera for "H" antigen of B. para-typhosus B were greater than those obtained for the analogous antigen of B. typhosus in cases of typhoid. In only one instance (case 22) was a negative agglutination reaction obtained, but in this case the culture was positive. In only one case was the titre of the serum for the "H" antigens of B. typhosus and B. para-typhosus B similar, but when the agglutinins were calculated in units a greater number of units were present for B. para-typhosus B than for B. typhosus. As regards agglutinins for the "O" antigens of B. para-typhosus B, the highest titre obtained was 1 in 400, and in no instance was "O" agglutination only obtained. Again in no instance was the titre for the "O" antigen greater than for the "H," while the sera from 18 cases showed no agglutinins for the "O" antigen of B. para-typhosus B at the time when the test was made.

TABLE V.—PARATYPHOID FEVER.—AGGLUTINATION TESTS WITH OXFORD STANDARD
AGGLUTINABLE SUSPENSIONS B. PARATYPHOSUS B "O" ANTIGEN EXCEPTED.

Case.	B. Typhosus.				B. Paratyphosus B.		
	H Antigen.		O Antigen.		H Antigen.		O Antigen.
	Titre.	Aggn. Units.	Titre.	Aggn. Units.	Titre.	Aggn. Units.	Titre.
1	200	27	100	10	25,600	8,256	200
2	100	13	50	5	51,200	16,512	50
3	0	0	50	5	6,400	2,064	0
4	0	0	50	5	12,800	4,128	0
5	0	0	0	0	6,400	2,064	0
6	0	0	0	0	1,600	516	0
7	0	0	0	0	800	258	0
8	0	0	0	0	1,600	516	0
9	0	0	0	0	6,400	2,064	0
10	0	0	0	0	800	258	0
11	0	0	50	6	3,200	1,032	0
12	0	0	50	6	102,400	51,200	100
13	0	0	25	3	400	200	100
14	0	0	0	0	12,800	6,400	400
15	0	0	200	25	102,400	24,480	100
16	0	0	0	0	51,200	12,240	50
17	200	28	100	12	1,600	320	100
18	0	0	0	0	200	40	0
19	0	0	0	0	800	160	100
20	0	0	0	0	0	0	0
21	1,600	228	100	12	1,600	320	200
22	100	14	50	6	200	65	0
23	0	0	50	6	6,400	1,280	200
24	100	14	0	0	1,600	320	0
25	400	64	50	6	3,200	1,600	100
26	50	7	0	0	6,400	1,280	25
27	0	0	50	6	800	400	50
28	1,600	228	100	12	1,600	320	200
29	0	0	0	0	400	80	0
30	25	4	25	3	12,800	4,000	50
31	0	0	0	0	200	40	0
32	0	0	0	0	1,600	320	100
33	25	3	0	0	6,400	1,280	400
34	0	0	100	12	800	160	200
35	0	0	0	0	800	160	100
36	0	0	25	3	400	80	50
37	0	0	0	0	800	160	50
38	200	28	0	0	3,200	640	25
39	0	0	400	50	51,200	10,220	800
40	50	7	0	0	12,800	2,560	400
41	0	0	0	0	200	0	0
42	100	14	50	6	200	40	0

A summary of the bacteriological findings in these 42 cases is presented in Table VI. In 13 or 25% of cases the infecting organisms were successfully isolated by culturing the blood clot in bile. In 14 cases actually admitted to the wards of the City Hospital (cases 1 to 5 and 11 to 19 inclusive), it was possible, by repeated examinations of blood, urine and faeces, to obtain the infecting organism from one or more sources in 13 cases. The remaining specimens were obtained from cases in outlying areas, and naturally the bacteriological investigation of these was not so thorough.

TABLE VI.—PARATYPHOID FEVER.—BACTERIOLOGICAL FINDINGS IN 42 CASES.

Case	Blood	Urine	Faeces	Case	Blood	Urine	Faeces
1	—	+	+	22	+	—	—
2	—	+	+	23	+	—	—
3	+	+	+	24	—	—	—
4	+	+	+	25	—	—	—
5	+	—	+	26	—	0	0
6	—	—	+	27	—	0	0
7	—	—	+	28	+	—	+
8	—	0	0	29	+	—	+
9	—	0	0	30	—	0	+
10	—	0	0	31	—	0	0
11	—	+	+	32	+	0	0
12	+	+	+	33	+	0	0
13	+	+	+	34	—	0	0
14	—	+	+	35	—	0	0
15	—	—	+	36	—	0	0
16	—	+	+	37	—	0	0
17	—	+	+	38	+	0	0
18	—	—	—	39	—	0	0
19	—	+	+	40	+	0	0
20	—	—	—	41	—	0	0
21	—	—	—	42	—	0	0

Associated Cases Bracketed.

+

—

0

= Positive culture.

= Negative culture.

= No specimen.

SERA FROM INOCULATED PATIENTS.

During the course of this work a number of specimens were obtained from individuals who had received during previous years some form of prophylactic inoculation against the enteric group of organisms. In Table VII. the positive results are presented, and here it will be seen that agglutination was mainly obtained against the "H" antigen of *B. typhosus*, the highest titre recorded being 1 in 400. In only two instances was agglutination obtained against the "O" antigen of *B. typhosus* and in six instances against the "H" antigen of *B. para-typhosus* B, and in not a single instance against the "O" antigen of this latter organism.

TABLE VII.—EXAMINATION OF SERA FROM INOCULATED PATIENTS.—AGGLUTINATION RESULTS WITH OXFORD STANDARD AGGLUTINABLE SUSPENSIONS *B. PARATYPHOSUS* B "O" ANTIGEN EXCEPTED.

Case.	Date of last inoculation	B. Typhosus				B. Paratyphosus B.		
		H Antigen		O Antigen		H Antigen		O Antigen
		Titre	Aggn. Units.	Titre	Aggn. Units.	Titre	Aggn. Units.	Titre
1	1915	50	6	0	0	0	0	0
2	1918	200	24	0	0	0	0	0
3	1915	400	48	0	0	0	0	0
4	1928	50	6	0	0	50	22	0
5	1925	50	7	0	0	0	0	0
6	1917	200	31	0	0	0	0	0
7	1928	200	31	200	10	0	0	0
8	1922	100	15	50	5	0	0	0
9	1918	25	6	0	0	50	14	0
10	1917	200	32	0	0	50	25	0
11	1918	100	16	0	0	0	0	0
12	1928	50	7	0	0	50	10	0
13	1926	200	28	0	0	100	20	0
14	1927	100	14	0	0	0	0	0
15	1918	200	28	0	0	50	10	0
16	1929	25	3	0	0	0	0	0
17	1918	50	7	0	0	0	0	0

CASES WITH MINOR AMOUNTS OF AGGLUTININS.

In all, 10 cases showed minor amounts of agglutinins for the "H" and "O" antigens of *B. typhosus* and *B. para-typhosus* B (Table VIII.) and, although some of the reactions were suggestive of an infection due to a member of the enterica group, the subsequent history in some outruled this possibility. Thus, cases 1 and 10 were found to be suffering from tuberculous meningitis, in cases 2 and 7 a diagnosis of tuberculosis of the abdominal lymph glands was made, case 3 suffered from puerperal fever, case 4 from undulant fever, while in the remaining cases the clinical diagnosis was not available.

TABLE VIII.—CASES SHOWING MINOR AMOUNTS OF AGGLUTININS.

Case.	B. Typhosus.				B. Paratyphosus B.		
	H Antigen.		O Antigen		H Antigen		O Antigen
	Titre.	Aggn. Units.	Titre.	Aggn. Units.	Titre.	Aggn. Units.	Titre
1	0	0	50	6	0	0	0
2	0	0	0	0	50	14	0
3	25	3	25	3	0	0	0
4	0	0	0	0	50	14	50
5	25	3	0	0	25	7	0
6	25	3	0	0	25	7	0
7	0	0	50	5	0	0	25
8	50	0	50	5	50	10	50
9	0	0	100	10	0	0	0
10	50	7	50	50	0	0	0

COMPARATIVE VALUES OF LIVING AND KILLED ANTIGENS.

The sera from 8 cases of typhoid fever and 20 cases of para-typhoid fever were tested comparatively against the "H" and "O" living and killed antigens of *B. typhosus* and *B. para-typhosus* B as already described, and the results of these tests are presented in Table IX. The results obtained show that, provided the living antigens were grown on a favourable culture medium, the titres obtained against the living and killed organisms were very similar. Regarding the killed Oxford suspensions as standard, the titre for the living organism was frequently the same, but occasionally varied to the extent of 100 per cent. (or 1 dilution by the method used); in some cases a higher titre was obtained against the killed Oxford suspensions than against the living organism; in others the reverse occurred.

TABLE IX.—COMPARISON OF AGGLUTINATION TESTS ON KILLED AND LIVING SUSPENSIONS.

Case.	Type of Case.	B. Typhosus.				B. Paratyphosus B.			
		H Antigen.		O Antigen.		H Antigen.		O Antigen.	
		Killed.	Living.	Killed.	Living.	Killed.	Living.	Killed.	Living.
13	Typhoid	800	200	0	0	0	0	25	50
14	"	1,600	1,600	400	800	25	25	100	100
17	"	100	100	50	100	0	0	0	0
18	"	12,800	12,800	50	50	0	0	0	0
19	"	200	200	100	50	0	0	0	0
26	"	6,400	6,400	0	0	1,600	800	200	200
27	"	100	100	0	0	0	0	0	0
28	"	50	50	25	25	0	0	50	100
12	Para B.	0	0	50	50	102,400	51,200	200	200
13	"	0	0	25	25	400	400	100	200
14	"	0	0	0	0	12,800	12,800	400	1,600
15	"	50	200	100	100	102,400	51,200	100	50
16	"	0	0	0	0	51,200	25,600	50	25
17	"	200	50	100	50	1,600	1,600	100	200
18	"	0	0	0	0	200	100	0	0
20	"	0	0	0	0	400	200	100	200
21	"	200	100	0	0	3,200	1,600	0	0
23	"	0	0	50	50	6,400	3,200	0	0
24	"	100	100	0	0	1,600	800	0	0
25	"	400	100	25	0	3,200	3,200	100	100
30	"	25	50	25	50	12,800	6,400	50	100
32	"	0	0	0	0	1,600	1,600	100	50
33	"	25	0	0	0	6,400	3,200	400	400
34	"	0	0	100	100	800	800	200	400
35	"	0	0	0	0	800	400	100	50
36	"	0	0	25	0	400	400	50	200
37	"	0	0	0	0	800	200	50	50
38	"	200	0	0	0	3,200	1,600	25	25

SERUM REACTIONS IN CASES SUFFERING FROM INFECTIONS DUE TO MEMBERS
OF THE SALMONELLA GROUP OTHER THAN *B. TYPHOSUS* AND
B. PARA-TYPHOSUS B.

During the course of the investigation a few blood specimens were obtained from cases in which the clinical history, given by the medical practitioner, suggested the possibility of an infection due to a member of the Salmonella group other than *B. typhosus* or *B. para-typhosus B.*, although in each case a Widal reaction only was requested. In the following cases certain difficulties in serological diagnosis are illustrated.

Case 1.—From F. M., a male patient aged 11 years, who had been ill for 5 weeks, a blood specimen was received with a request for a Widal reaction. The patient's serum failed to agglutinate *B. typhosus* "H" and "O," *B. para-typhosus A.*, "H" and *B. para-typhosus B.* "O," but agglutinated *B. para-typhosus B.* "H" (non-specific) to a dilution of 1 in 6,400. In addition, the blood clot was cultured in bile and an organism giving typical cultural and bio-chemical reactions of the para-typhoid group was obtained, and in addition, this organism agglutinated to the full titre of a non-specific para-typhoid B serum. Later absorption tests were carried out, using a specific para-typhoid B serum, with the result it was found that the organism was not a strain of *B. para-typhosus B.*, and further seriological investigation showed it to be a *Sal. aertrycke* strain. Inquiry was then made as to the clinical history of this patient, and from Dr. Bower the following particulars were obtained:—

The patient became ill with diarrhoea and vomiting, and this was followed two days later by fever and general malaise. He was admitted to hospital 1 week after the onset, when his temperature was evidently of that type usually associated with a septicaemia, rising every evening to 103° F. or thereabout. The boy complained of pain in the larger joints, the tongue was moist and clean, the abdomen was distended, the spleen was enlarged and he had marked diarrhoea. The fever continued, the patient showed marked wasting, and in the fifth week of the illness developed generalised lymphadenitis.

Inquiry also showed that two more members of the same family had had symptoms of food poisoning at the same time as this patient became ill, but rapidly recovered from their illness.

Case 2.—M. B. A blood specimen was obtained from this patient with the request for a Widal reaction to be done. It was found that the serum agglutinated the "H" antigen of *B. typhosus* 1 in 50 and *B. para-typhosus B.* (non-specific) 1 in 800, and showed no agglutination against the "O" antigen. The serological findings suggested infection due to *B. para-typhosus B.*, but inquiry showed that the symptoms—vomiting, diarrhoea and fever—were not those of para-typhoid fever but of food poisoning.

Accordingly, a specimen of faeces was obtained and a non-lactose fermenter, which agglutinated with the patient's serum to a dilution of 1 in 400, was obtained. Later, serological examination of the organism by Dr. W. M. Scott of the Ministry of Health Laboratory showed it to be *Salmonella* type Thompson in the non-specific form.

Case 3.—K. L. This patient gave a history of vomiting, diarrhoea, abdominal pain, and fever which had continued for some time. As a result of a serological examination at another laboratory, a diagnosis of para-typhoid fever was made. Further examination of a fresh specimen showed that the serum did not agglutinate the specific "H" antigen of *B. para-typhosus B.*, but agglutinated the specific "H" antigen of *Sal. aertrycke* to 1 in 12,800 and the "O" antigen of *B. typhosus*, *B. para-typhosus B.* and *Sal. aertrycke* to 1 in 400. The conclusion reached, therefore, was that a non-specific "H" antigen of *B. para-typhosus B.* had been used in the first instance and hence the diagnosis of para-typhoid fever.

Case 4.—P. S., a male aged 17 years; became ill on 11/10/30, the main initial symptoms being vomiting, severe diarrhoea, and fever. The fever continued, rose spots appeared on the abdomen and back 5 days after the commencement of the illness, the spleen became palpable; the symptoms then subsided, and the patient's temperature became normal on 20/10/30. A blood sample sent in on this latter date showed no agglutination with the "H" antigens of *B. typhosus*, *B. para-typhosus* B (specific), A or C, but agglutinated the "O" antigens of *B. typhosus* 1 in 100 and *B. para-typhosus* B 1 in 200. In view of the history the serum was then tested against the "H" antigens of *Sal. aertrycke* (specific) and *B. enteritidis*, with the result that the former organism agglutinated with the serum to a titre of 1 in 800. The patient's physician was then asked to send 2 specimens of urine and faeces, but bacteriological examination gave negative results for any member of the *Salmonella* group. The serological findings and clinical history indicated, however, that the patient must, most probably, have suffered from a septicaemia due to *Sal. aertrycke*.

DISCUSSION.

Felix (1930) has maintained that in the majority of cases of infection due to *B. typhosus* and *B. para-typhosus* B it is possible to make a serological diagnosis on the basis of a qualitative, as opposed to quantitative, analysis of the agglutination for the "H" and "O" antigens of the various infecting organisms; "H" agglutination being obtained only with the homologous organism, while "O" agglutination indicates simply infection with the "enterica group." He suggests that 2 dilutions—1 in 100 and 1 in 200—of the serum should be tested against the various antigens. The results presented in this paper confirm his contention. In the sera obtained from 28 cases of typhoid fever only 4 of these specimens showed floccular agglutination with the "H" antigen of *B. para-typhosus* B in a dilution of 1 in 100 or more. In 2 cases the sera agglutinated *B. para-typhosus* B "H" to 1 in 100, and in the remaining 2, to 1 in 400 and 1 in 1,600 respectively. Similarly with the sera from 42 para-typhoid cases 14 specimens agglutinated *B. typhosus* B "H" to a dilution of 1 in 100, 3 to 1 in 200, 1 to 1 in 400, and finally 2 to 1 in 1,600. The qualitative method would, therefore, fail to distinguish between infections due to *B. typhosus* and *B. para-typhosus* B, and in these cases it would appear to be essential to titrate the sera to their end points.

According to Felix (1930) also, "O" agglutination with one or two of the various antigens gives only the diagnosis "enterica group," and further, the differentiation between typhoid and para-typhoid B cannot be reached from "O" agglutination even by titrating these agglutinins to their end titres. In the present investigation, the value of testing the sera against the "O" antigen of *B. typhosus* is evident, since in the early stages of typhoid fever the "O" agglutinins appeared first in the sera in some instances. In the para-typhoid cases, however, the advantage derived from using the "O" antigen of *B. para-typhosus* B is not so evident, since in not a single case was a greater amount of agglutinins present for the "O" antigen than for the "H," and it did not appear that these results were due to a comparatively insensitive suspension as this "O" antigen agglutinated freely and to full titre of a serum prepared for *Sal. aertrycke* "O" variant. Again in only one instance was a negative agglutination reaction obtained and, later, a positive blood culture. Furthermore, in typhoid fever there was no marked correlation between the "O" agglutinins for *B. typhosus* and *B. para-typhosus* B "O" antigen, and in para-typhoid fever a similar state of affairs was evident. In certain cases of typhoid fever, "O" agglutinins appeared only for *B. typhosus*, and in some cases of para-typhoid fever agglutinins appeared only for *B. para-typhosus* B. White (1929) in his investigations on the antigenic structure of the *Salmonella* group, has shown that the reactions of the somatic antigens of *B. typhosus* and *B. para-typhosus* B are different, but that minor and variable cross agglutination does occur.

As regards the comparative values of living and killed antigens, no particular advantage is derived from continued use of living organisms. Satisfactory and, to all intents and purposes, identical reactions can be obtained with either type, but the living organisms require special cultural conditions and their characteristics require to be frequently checked, whereas the killed antigens, as obtained from the Standards Laboratory, Oxford, are readily available whenever required.

Again the results obtained in other *Salmonella* infections indicate that the specific phase of *B. para-typhosus* B "H" antigen should be used in the serological diagnosis of para-typhoid fever, and that the group agglutination reactions should be checked by using a suspension of such an organism as *Salmonella Suipestifer* Type G. Prior to March, 1930, the Standards Laboratory, Oxford, issued the *B. para-typhosus* B "H" antigen in a mixed specific and non-specific form, but since that date it has been issued in the specific form.

Gardner, Hobson, and Stenhouse (1930) have reported the occurrence of the "O" variant of *B. typhosus* in the blood of a case which showed "O" agglutinin. In one case (25) which showed only "O" agglutination, the organism obtained from the blood appeared entirely normal in character as it was actively motile and agglutinated to the full titre of a typhoid "H" serum, while in another case (13) the typhoid strains, isolated from the blood and faeces and grown in ordinary agar, would only agglutinate in a granular fashion with a pure "O" serum of *B. typhosus* and not with the pure "H" serum of this organism. Nevertheless the organism in young broth culture was motile, and a rabbit immunised with a culture grown on the semi-solid agar media produced a serum which agglutinated *B. typhosus* "H" in a dilution of 1 in 12,800 and *B. typhosus* "O" to a dilution of 1 in 400.

The shortcomings of the original Widal reaction have been emphasised by many workers (Pijper, 1930; Manifold, 1930), but with the general adoption of a serological test in which the "H" and "O" components of the various organisms are employed, much more satisfactory results should be obtained. In this particular area an ample supply of blood has been demanded for some years so that a macroscopic and extensive serological examination could be made with the various antigens, and so that the blood clot could be cultured in bile. By employing these methods no serious difficulty has been encountered in the diagnosis of typhoid and para-typhoid fevers, and, since about half the specimens submitted for examination were obtained from cases under personal observation, any discrepancy would soon have been noted.

A comparison of the value of suitable living and killed antigens has been made. Either type of antigen appears to be equally effective, but for convenience and stability the suspensions issued by the Standards Laboratory, Oxford, have proved entirely satisfactory.

Cases showing the serological difficulties which arise when a mixed specific and non-specific form of *B. para-typhosus* B "H" antigen is used are described.

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(3)—SERUM TREATMENT OF PNEUMONIA.

This disease constituted the most important acute disease treated in Woodend Hospital during the year, the total number of cases admitted being 354, as compared with 420 in 1929.

In 1930, 20 cases of lobar pneumonia were treated with Felton's serum, which is held to be efficacious in infections due to pneumococci belonging to Types I. and II., but to possess no therapeutic value in pneumonia due to Type III. and Type IV. pneumococci. The serum was not given to any patient under the age of 15 years nor to any patient who had been definitely ill for more than three days.

This investigation was carried out at the request of the Medical Research Council and was under the direction of Professor L. Stanley P. Davidson, Regius Professor of Medicine, University of Aberdeen.

The routine methods employed in the investigation of cases suffering from lobar pneumonia were the following:—

Immediately after admission, from 0.5 to 1 c.c. of blood-stained sputum was injected into the peritoneal cavity of a mouse in order to type the pneumococcus and about 10 c.c. of the patient's blood was withdrawn by means of "Citrate Behring Venule" for blood culture purposes. After a period of 12 to 18 hours, the milky exudate which had accumulated in the coelom of the mouse was withdrawn and centrifuged until it consisted entirely of thick suspension of pneumococci. To equal quantities of this exudate were added fixed amounts of specific agglutinating sera and, after incubation, the tube showing agglutination indicated the type of pneumococcus originally present in the patient's sputum. From the blood withdrawn from the patient, blood broth and blood agar cultures were made and the pneumococci, if present, were typed. Twenty per cent. of cases showed a positive blood culture; it was positive in highest proportion in Type III. infections, and these were the cases with the highest mortality.

Of the 20 Type I. and Type II. cases who received serum only 1 died. The fatal case was a woman aged 23 years who suffered from Type II. pneumonia. This patient was admitted on the third day of illness when she received five doses of Felton's serum intravenously. Her blood cultures remained sterile; she had

a pseudo crisis on the eighth day, but a further extension of the disease to the other lung occurred on the fifteenth day and despite the treatment she died on the eighteenth day.

As control cases for the above group, twenty Type I. and Type II cases of pneumonia did not receive the serum. Of these five died, but it should be observed that two of the fatal cases were admitted on the fifth day of illness and would not in all probability have responded to serum treatment so well as would other cases.

It is true that the number of cases treated with serum is too small to permit of definite conclusions being drawn. It must also be admitted that cases suffering from Type I. and Type II. pneumonias tend to run a self-limiting course. Nevertheless, a study of the charts of the cases treated with serum shows that 30 to 40 per cent. of those cases had their crises as early as the fifth day, a small proportion having their crises even before the fifth day. The serum-treated patients had uncomplicated convalescence in practically every case and, in addition, the convalescent period appeared to have been definitely shortened.

This treatment of special cases of pneumonia with serum will be continued during 1931.

(4) INVESTIGATION OF TUBERCULOUS INFECTION IN MILK.

A proposal was submitted to the Department of Health by the Hannah Dairy Research Institute that an investigation should be made into the incidence of tuberculous infection in milk. The Department approved of the proposal, with the result that the work was undertaken at the Public Health Laboratories at Aberdeen, Glasgow, Edinburgh and Dundee, and at the Hannah Institute. The investigation involves a large amount of work and a considerable part of the cost will be defrayed by funds provided by the Empire Marketing Board.

The investigation will extend over a period of two years, and the following types of milk are being sampled and tested:—

- (a) Raw milk (excluding graded milk);
- (b) Retail milk as sold over the counter and from cart;
- (c) Pasteurised milk (excluding Grade A Pasteurised);
- (d) Graded milk; and
- (e) Condensed and dried milk.

The technique employed at each of the centres is identical and thus discrepancies due to different methods of sampling are avoided. The bacteriological work is being carried out by Dr. Smith, while the sampling is in the hands of Mr. McAllan, Veterinary Officer.

During the first six months of the experiment, 345 samples were examined at the City Hospital, and the results are tabulated as follows:—

Type of Milk.	Total Samples.	Positive.	Doubtful.	% Positive.
Raw	161	14	3	8·7
Retailed	46	6	1	13·0
Pasteurised	138	7	0	5·1
Graded Milks ... ..	...	...	...	...
Dried Milks ... ..	...	...	...	...
Totals	345	27	4	7·8

By this investigation, there will be obtained a scientific estimate of the incidence of tuberculous infection in the milk supply and also a measure of the efficacy of modern pasteurisation, and the relative merits of different methods of pasteurisation. It will, in all probability, stimulate the public increasingly to demand tubercle-free milk, and this would induce producers to endeavour to eradicate tuberculosis from their dairy herds. It is not yet fully realised how dangerous tubercle bacilli of bovine origin are to children and what a very large proportion of cases of non-pulmonary tuberculosis have their origin in tubercle-infected milk.

II.—SYNOPSIS OF PAPERS DELIVERED TO MEDICAL AND OTHER SOCIETIES.

(a) SOME LOCAL AND GENERAL PROBLEMS IN TUBERCULOSIS ADMINISTRATION

Delivered to the Tuberculosis Society of Scotland in April, 1930, by the Medical Officer of Health.

Expenditure.—In introducing the discussion on Some Local and General Problems in Tuberculosis Administration at this meeting of the Tuberculosis Society, it would be instructive to give some indication as to the cost of the chief social services as a whole and of the tuberculosis services in particular.

In Scotland, the total amount expended on the four major health services during the last financial year was £1,194,100, and this sum was allocated as follows:—

Tuberculosis	£626,000
Mother and Child Welfare	271,000
Venereal Diseases	78,000
School Medical Services	219,100

With regard to local expenditure, the relative figures for the City and County of Aberdeen for the past year were:—

	City.	County.
Tuberculosis	£21,800	£22,900
Mother and Child Welfare	16,500	3,200
Venereal Diseases	6,000	530
School Medical Services	4,700	5,020
	<u>£49,000</u>	<u>£31,650</u>

The annual amount spent on the treatment of tuberculosis is enormous, and, from a purely administrative point of view, it is necessary to make a survey of the whole position, to ascertain whether such huge expenditure is justifiable, and to determine in what respects our tuberculosis schemes fall short. Coming down to hard facts, the only possible justification for such an expenditure is a diminution in the mortality from this disease.

Mortality.—First consider briefly the death-rate from tuberculosis. Statutory institutional provision for cases of tuberculosis was made in 1912. In that year, the death-rate from tuberculosis—both pulmonary and extra-pulmonary—was considerably higher in Scotland than in England. In the development of tuberculosis accommodation, Scotland has greatly exceeded England and has now almost double the number of tuberculosis beds per 100,000 of population as compared with England. Coincidentally, the fall in the tuberculosis death-rate, from both forms of the disease, has been more rapid in Scotland than in England, and is now below that of England. The claim has been put forward that this accelerated decline in the death-rate from tuberculosis in Scotland has been due to the greater institutional provision which has been made in Scotland. It is doubtful if this conclusion is justified as a full explanation of the fact, but nevertheless it is certainly worthy of mention.

It is true that the segregation of consumptives for a few months means merely dealing with a small fraction of their infective career, but, in summation of all cases, it does mean a considerable reduction of infection.

Now let us consider the mortality in Aberdeen. We find that in the quinquennium 1856 to 1860, the mortality for all forms of tuberculosis was 500 per 100,000 of population, whilst in the quinquennium 1921 to 1925, it had fallen to 120. That is, it had declined to less than a quarter of the rate obtaining 65 years previously. In 1929, the uncorrected death-rate shows a surprising drop to the record figure, namely, 84 per 100,000 of population for all tuberculosis, the 84 being apportioned at 58 for respiratory and 26 for other tuberculosis.

Problems.—The following are some of the administrative problems which Local Authorities have to face.

1. *Institutional Treatment*—(a) *Pulmonary Tuberculosis.*—By far the greatest portion of the tuberculosis expenditure goes in institutional treatment. In connection with the treatment of respiratory tuberculosis, with tubercle bacilli in the sputum, and excepting cases of so-called "galloping consumption," the proposition is being increasingly advocated that the long-continued treatment of such cases in institutions—over many months or even years—is not justified by the results, that these cases should be admitted to institutions for, say, a period of three or four months with a view to their being educated to live the tuberculosis life, and that thereafter they should put into practice in the conduct of their lives at home what they have learned in the tuberculosis institutions. Those of us who have been tuberculosis officers know that, in the main, these cases do not practise the hygienic method of living that they were taught in the institutions. If this be granted, what is the remedy? It would appear that the solution of the difficulty lies in some form of concentrated visitation of these cases in their houses, by the family doctors or by tuberculosis health visitors, or by the Tuberculosis Medical Officer. It is highly desirable that, to ensure a closer co-operation with the medical practitioners, this important work should be undertaken by the family doctors, who would require to be adequately remunerated for their services.

(b) *Non-Pulmonary Tuberculosis.*—When the Local Government (Scotland) Act of 1929 comes into force in May next, it will be possible for Local Authorities to re-allocate tuberculosis beds as between pulmonary and non-pulmonary tuberculosis. Most of you will agree that the more chronic cases of pulmonary tuberculosis should have a shorter

period of institutional treatment for education purposes and should thereafter receive domiciliary treatment. The beds thus liberated could, with advantage, be allocated to the non-pulmonary forms of tuberculosis, which give the greatest hope of arrest and cure. In recent years, great advances have been made in the application of orthopædies and of conservative surgery to the treatment of certain types of non-pulmonary tuberculosis, especially tuberculosis of the spine, bones, and joints.

Every Local Authority, or a combination of Local Authorities, must provide facilities for the earliest diagnosis of non-pulmonary tuberculosis with a view to its conservative treatment on modern lines. This should be carried out on a regional basis, and success can only be achieved if Local Authorities avail themselves of the same expert services as are available in the voluntary hospitals. In the case of our City Hospital, we have on the staff several specialists attached to the voluntary hospitals; and the efficiency of the City Hospital has been enhanced by the inclusion of surgical experts who are also on the staffs of the voluntary hospitals.

Non-pulmonary tuberculosis must be dealt with on a regional basis, and that, although it is a statutory disease, we are determined not in any way to interfere with the functions of the voluntary hospitals but to act in a complementary capacity to them. The specialists of the voluntary hospitals are our specialists. By this spirit of co-operation we shall prove that, although an increasing number of statutory diseases are being thrust on the Local Authority, we shall do everything in our power to assist the voluntary hospitals in our area.

(c) *Early Cases of Pulmonary Tuberculosis*.—Regarding the problem of the highest form of sanatorium treatment for the really early case of pulmonary tuberculosis, it must be conceded that up to the present the Local Authority provision for such cases, throughout Great Britain, has been, to say the least of it, defective. The best form of sanatorium treatment for these cases has largely been provided by private sanatoria, such as Tor-na-Dee, Nordrach-on-Dee, King Edward Sanatorium, and various private sanatoria throughout the country. Such sanatorium provision requires that the number of cases in the sanatorium should be limited to about 100, and certainly never more than 200 cases. As in other up-to-date tuberculosis institutions, facilities for X-ray examination are essential. This ideal sanatorium requires a very small ratio of patients per doctor and nurse and expensive equipment. It requires that the doctors and nurses should live the life of the sanatorium patients. There are comparatively few cases of respiratory tuberculosis recognised sufficiently early to derive benefit from such treatment, and it is a matter for discussion whether this sanatorium provision for the really early case, if it is to be made, is to function on a regional basis or on a national basis for Scotland.

2. *After-care*.—The institutional care of the consumptive has been dealt with at some length, but an equally important administrative problem is the after-care of the tuberculous patient.

This problem can be profitably discussed from the viewpoint of :—

- (a) Tuberculosis Colonies.
- (b) Institutions, such as Hairmyres.
- (c) Local Workshops.

(a) *Tuberculosis Colonies*.—A comprehensive colony scheme does not confine itself merely to the admission of arrested cases. It embraces a hospital, a sanatorium, a colony village with its industries, etc. Interlinked with this particular part of the problem, there is the matter of the children of tuberculous parents growing up in the village settlement and the intermarriage of these children as the result of propinquity. If there is any substance in what is described as hereditary predisposition, one would naturally conclude that the intermarriage of the families of such tuberculous persons is dysgenic.

(b) *Institutions like Hairmyres*.—Again it is doubtful whether the Hairmyres arrangement should be multiplied throughout Scotland. It would appear that the cost per patient at Hairmyres is in excess of the benefit received.

(c) *Local Workshops*.—More than one Local Authority have proposed to develop the idea of Local Workshops. In such a workshop, a small number of persons, say, six, would be regularly employed, but the overhead charges would appear to be excessive. Would it be possible to get the same result by giving suitable tuberculous patients shelters in their back gardens, in which they might work? They would be provided with the equipment necessary for the work in which they were engaged, and an organisation would be required for marketing the goods which they manufacture. It must, however, be remembered that new legislation would be required if the wages of such workers were to be subsidised by the Local Authority.

3. *Milk Supply*.—One of our greatest administrative difficulties is to provide a pure milk supply to the community. It is only proper to state that, within recent years, a great improvement has taken place in the milk supply of Scotland. It can, nevertheless, be accepted that ordinary market milk consumed in Scotland contains living tubercle bacilli to the extent of anything from 5 to 10 per cent. of samples examined. This percentage may be considerably diminished by the flash-point heating to which much of the milk, particularly in Glasgow, is subjected before distribution. In Aberdeen, the percentage of tuberculosis infection in milk averages 5 per cent. of samples examined. In Aberdeen, one guinea-pig is used for inoculation. On the other hand, in Edinburgh, where two guinea-pigs are inoculated with the milk sample sediment, the proportion is 10 per cent.

How is this gross infection through milk to be prevented? Major Elliot has promoted a Bill which is at present before Parliament, empowering Local Authorities to provide milk to school children. If this Bill is enacted, Local Authorities will be in a position to provide a milk ration for every school child under their control. It naturally follows that Local Authorities will announce that they are prepared to make contracts for market milk for school children for a period of, say, six to twelve months, and thereafter to require that only Grade A (T.T.) milk will be accepted for school children. This will have the effect of causing farmers to rid their dairy herds of tuberculin-reacting cows, and thus the elimination of tuberculosis from the dairy herds of Scotland would be secured without any expensive slaughtering and compensation at the expense of the State. If this can be effected no action could do more to reduce the incidence of the bovine type of tuberculous infection in the human population of this country.

4. *Preventoria*.—Administratively, we can effect the greatest economy if we can prevent the seeds of tuberculosis being sown in childhood. In this area there are two preventoria, one of which is Linn Moor Home, Culter—nine miles from Aberdeen—where pre-tuberculous children, with the stigmata of tuberculosis, are accommodated for various periods, some of them being treated for over a year. In this institution, the children—whose ages range from three to thirteen years—are carefully nursed; a trained teacher attends twice weekly, and a remedial expert is also in attendance. The other preventorium is Newhills Home—four miles from Aberdeen, where for many years, splendid preventive work has been performed.

Every Local Authority—or it may be a combination of Local Authorities—should establish preventoria. Initially, such a scheme may appear to be extravagant; but it would ultimately prove a sound economic proposition, because the tissues of the child are flexible, they respond readily to environmental conditions, and such treatment, in many cases, prevents the onset of active and disabling tuberculosis in later life.

Conclusions.—Those engaged in the Clinical side of tuberculosis often fail to realise the administrative difficulties that confront a Medical Officer of Health.

The tuberculosis problem is associated with everything political, social, economic that affects the life of the people. It may truly be said that tuberculosis is dependent on housing, feeding, wages, habits of the individual, conditions of work, and life generally.

In this paper some of the most outstanding of the many difficulties of the tuberculosis problem have been pointed out—institutional treatment, domiciliary treatment, after-care, and milk supply. The administrative problems of tuberculosis bristle with more difficulties than do the clinical aspects of this protean disease.

(b) THE RÔLE OF THE MATERNITY HOSPITAL IN PREVENTIVE MEDICINE FROM THE PUBLIC HEALTH POINT OF VIEW.

Delivered at the Annual Meeting of the Royal Sanitary Institute in Glasgow by Dr. James A. Stephen, Regional Medical Officer for Maternity and Child Welfare for the City of Aberdeen and the Counties of Aberdeen and Kincardine.

Maternity and Child Welfare workers are concerned with the reduction of the death rate and morbidity rate of infants and young children, with the death rate and morbidity rate of women in pregnancy and child birth, and are responsible for securing that a healthy child population shall enter school at the age of five years.

These workers get their material from those actually doing Midwifery and are accordingly dependent on them for the quality of the material provided—good or bad as the case may be. Probably about one quarter of the births in large cities take place in Maternity Hospitals or in the Maternity Wards of general hospitals, and since most of the abnormal cases go there for delivery the Maternity Hospital is responsible for the most difficult types of children (*e.g.*, prematures, and those slightly injured at birth), and for the mothers who fail to come through the ordeal of delivery unscathed.

THE PROBLEM TO BE TACKLED.

These are some of the actual facts of the problem. "During the period 1871 to 1900 the infant mortality rate in Scotland (*i.e.*, the number of deaths of infants under one year per 1,000 births) fluctuated widely from year to year, showing rates varying from 108 to 136, with no definite tendency to decline. Since 1901, the tendency has been definitely downward."—(Second Annual Report of the Department of Health for Scotland, 1930).

In 1930 the rate was 83. A definite reduction has thus been secured, and a detailed analysis of this death-rate shows at what period of this first year these deaths actually occur. A large proportion take place on the first day of life, from one-fifth to one-sixth during the first week, and about one-fourth during the first month. Further investigation brings out that the reduction in the death-rate above referred to has taken place in the last eleven months of the first year, a reduction for which some credit may be claimed by Child Welfare workers, who teach the mothers better methods of feeding and infant care.

Very little impression has been made on the death-rate during the first month, often referred to as the "neo-natal death-rate," and when to this is added the still-birth rate and the abortion rate, the seriousness of the problem with regard to the infant is realised.

Why should there be such difficulty with this early period?

Child Welfare Workers cannot perform miracles. The fact is they do not get material capable of being saved. Improved methods of feeding and care do not get time to act. It is necessary to go further back and secure healthier parents, especially mothers, able to produce a healthier type of child. Hence the value of ante-natal care and the absolute necessity for educating the pregnant woman in her duty to herself, that is, of placing herself in skilled hands at as early a period as possible in her pregnancy. So much for the infant. *What about the mother herself?*

The spectre of maternal mortality with all its tragedy still stalks the path to a happier condition of affairs, and while the rate of maternal mortality is anything approaching 7 per 1,000 births, as it was in Scotland in 1930, no one can rest satisfied.

To this death-rate has to be added the large amount of morbidity directly resulting from pregnancy and delivery, and the problem from the point of view of the mother is seen to be also a serious one.

THE RÔLE OF THE MATERNITY HOSPITAL.

What is the rôle of the maternity hospital in this preventive work? In other words, how far, and by what means, can the maternity hospital help us to secure a healthier infant population, and pregnancy and delivery through which the mother will pass with safety, and be as good a woman physically and mentally as she was before becoming pregnant, and be able to carry on the tremendously important duties of motherhood in the best way possible?—a work of truly national importance.

The function of reproduction is a natural physiological process which should be kept as separate as possible from the idea of disease. So, in the first place, it might be suggested that the atmosphere of the maternity hospital should be one of health, happiness, and cheerfulness, and that every attempt should be made to combat the attitude of fear and anxiety with which so many women approach the time of pregnancy and delivery.

Let expectation with joy be her watchword rather than with dread!

Medical students and trained nurses have, up to this point in their curriculum, been accustomed to think of disease and its cure. In this department let us see to it that their aim be health and the maintenance of health—or, if you will, the prevention of disease. And let this atmosphere permeate the whole journey from the first ante-natal examination to the last post-natal.

We look to the maternity hospital to provide properly trained doctors and midwives, and in this connection attention may be drawn to the view of Sir Ewen Maclean, who, when speaking at a recent conference at Cardiff, stated that, compared with the time spent in surgery and medicine, the medical student should devote more time to obstetrics and gynaecology, for in obstetrics the single-handed country practitioner may be called on to perform duties demanding the highest skill when no immediate help is available.

If the general practitioner is to secure and maintain the position aimed at for him in the British Medical Association's scheme for a national maternity service as the pivot of the scheme, he must be thoroughly well trained in ante-natal, natal, and post-natal work, and he will require to keep up to date with his knowledge by attending refresher courses of post-graduate study.

We expect the maternity hospital to be a centre from which will radiate a constant supply of keen, thoroughly competent doctors and midwives, imbued with the principles of preventive methods to maintain health, and the centre to which later on they will look for expert help in difficulty.

Look how blindness from ophthalmia neonatorum has been practically banished by careful preventive methods, and, similarly, the baneful effects of venereal disease on the infant are being gradually overcome. When medical officers of health are busily engaged pondering over schemes under the 1929 Local Government Act we ought to be able to take a distinct step forward. By cordial co-operation between the public health departments of local authorities and the medical profession, it ought to be possible to secure the services of whole and part-time workers in a combined scheme which will enable distinct progress to be made.

In county areas, one can heartily commend a scheme such as that in force in Cumberland where the patient's family doctor, assisted by a nurse or midwife, is expected to do the work—ante-natal, natal, and post-natal—in the patient's home or at his own surgery or at a clinic, with all the assistance he requires in the way of expert opinion, nursing, transport, and hospital

services afforded him. In large cities the problem is not so difficult from the patient's point of view, but more difficult from the administrative point of view in arranging the part to be played by the general practitioner. However, if ante-natal records are kept by the family doctor, made available for the obstetrician, whoever he or she may be, and also to the public health authority for following up and statistical purposes, considerable progress towards continuity will be made.

The maternity hospital should provide a sufficiency of beds for all cases of abnormality, for those whose home conditions are not satisfactory, and for those who prefer to go to a hospital rather than have help—domestic and professional—at their own homes. The bed accommodation should be ample to keep the patient for fourteen days rather than ten days, as at present, to allow the mother to recuperate fully, and be able to undertake the onerous duties of her home.

It has to be remembered that the requirements of a maternity hospital in the way of space and size of wards are different from those of the general hospital. The conditions should be made as natural and home-like as possible—small, spacious wards with verandahs. From the point of view of infection, a few cubical-wards are to be preferred, but small wards to accommodate two-four patients could be accepted, as women in single wards or cubicles are apt to feel lonely and brood over their condition. The standard of space is laid down in Memo. 15 M. & C.W., 1920, by the Ministry of Health, viz., wards for patients and infants should have 96 square feet of floor space with 10 feet of height. Separate nurseries for infants should be provided to prevent the mothers being disturbed, and a special ward for premature infants should be provided. Separate wards and a separate labour-room should be available for all cases of abortion and cases where there is the least suspicion of infection. The actual training of medical students and midwives may be left to the obstetrician, but, in order to secure safer delivery, the **possibility of infection should be ever present in the minds of all concerned with midwifery**, and every possible means taken to prevent such. In this connection, reference may be made to the work of Dr. John Smith, City Bacteriologist, on an investigation into the "Causation and Source of Infection in Puerperal Fever," published by the Department of Health for Scotland a few months ago, and a synopsis of which will be found on page 1 of this Report.

This investigation proved beyond measure of doubt that in certain cases infection due to the streptococcus hæmolyticus may pass from the throat of doctor, nurse or attendant, directly to the uterus of the woman being delivered, the presumption being that the germs are breathed on to or coughed on to the hands, gloves or instruments of the operator even when the hands are encased in sterile gloves.

The only way to prevent such infection—and this is only one method of infection—is the wearing of an efficient mask by the operator. Sterile gloves and sterile instruments will not prevent infection of this type. Some operators may be chronic carriers of the streptococcus hæmolyticus, and, if so, should have their throats and noses seen to, but such must be rare.

During an epidemic of so-called influenza, however, many patients and members of staff of a maternity hospital may be found to be temporary carriers of this germ, and masking is the only prevention. It may be noted, in passing, that an efficient mask should be made of some impervious material. Careful watch for infection of this sort should be kept, the pulse of the patient being watched and given emphasis to, rather than the temperature (the three nines of Dr. Remington Hobbs—Temp. 99° F., Pulse 90—being a surer indication for isolation than the conditions requiring notification under the puerperal pyrexia regulations). Should it occur, removal of the patient to an infectious diseases hospital rather than removal to an isolation ward of the maternity hospital is to be preferred. Should the latter be resorted to, then there must be complete isolation of staff to nurse the patient.

During an epidemic of "colds" or "influenza," all visitors to an inlying woman, whether at home or in hospital, should be forbidden, and this should be impressed on all midwifery students during their training.

The conditions outlined may be difficult to obtain in the voluntary hospitals, but with co-operation from the public health authority, and generous treatment of this department by local authorities, they ought not to be impossible to secure.

Child welfare workers must do their part to help, and this part should be the education of the pregnant woman to realise the necessity for placing herself in skilled hands at as early a period in the pregnancy as possible. The doctor also must do his part efficiently. In addition, all women's organisations should be made use of for this purpose of basal importance in the prevention of disease in women. Full use should be made of the help of health visitors, district nurses, and maternity and child welfare centres.

A good almoner on the staff of a maternity hospital, working in close co-operation with the public health staff, will be of great value; she can act as the connecting link to follow up cases who do not attend the ante-natal clinics regularly. By working with health visitors, she can secure help to the woman in poor circumstances by extra nourishment, clothing, equipment for mother and child, home helps, etc. The rôle of the maternity hospital should include the provision of a **post-natal clinic**, to which all women delivered in the hospital or in its district should go for examination, say, at six weeks, to allow the obstetrician to see that the woman has completely recovered from the delivery, and to which all cases in the surrounding area may be sent for consultation and, if necessary, for treatment. Close co-operation with a gynaecological department naturally follows this provision.

One would like to see beds made available for a doctor, should he himself care to attend the case, and such accommodation might be found in the beds of the old poor law hospitals. The confidence and trust of the patient in her own doctor would thus be secured for her, should her case prove difficult and require hospital treatment with all its ancillary services. In this connection small cottage hospitals might receive maternity cases and be linked up with the central hospital.

Every maternity hospital should have available the services of a competent bacteriologist.

Then we expect the maternity hospital to keep up our enthusiasm for research into those difficult problems which await solution. In a recent article in *The Lancet*, Dr. Solomon, of the Rotunda Hospital, stated that for every case of puerperal sepsis there was a cure. Would that that were the general experience. For the patient with a mass infection of hæmolytic streptococcus on the second or third day after delivery, little seems to be of much use in treatment.

Further, can something more not be done in the way of prevention by getting the pregnant mother into a condition of better health during her pregnancy by better feeding and flushing her tissues with Vitamin A, as has been recently suggested?

Here is a field worthy of research!

The rôle of the maternity hospital is a wide and responsible one in preventive medicine, full of possibilities. With regard to the infant, the maternity hospital is there at the very beginning of life, and if all interested in maternity and child welfare pool their efforts, progress is bound to come, and another step forward will be taken towards that *racial betterment* which is the desire of all.

CHAPTER II.

RE-ORGANISATION OF MEDICAL SERVICES.

(a) **Medical Aspects of the Local Government (Scotland) Act, 1929.**

This Act, which came into operation on 16th May, 1930, transferred the medical services of the schools and poor law to the Local Authority. The control of Kingsseat Mental Hospital was also transferred to the Town Council.

Naturally, these drastic changes were regarded by many with alarm, but, although only a short time has elapsed since these new health obligations were placed on the Local Authority, it can safely be said that the change has proved to be advantageous. Self-contained medical units have been abolished, and the services of the whole medical staff have been rendered available for each branch of health work.

For many years it was obvious that the inferior poor law hospital service could no longer be justified, and the Local Government (Scotland) Act, 1929, provided the unification that permitted of poor law hospital reform. In this connection, the pioneering hospital movement was effected in Aberdeen whereby the unification and modernisation was achieved some two years in advance of general legislative sanction. The transfer of the poor law hospitals to the Aberdeen Town Council in 1927 was a great experiment, followed by results which fully justified its initiation. Much credit is due to the longsighted view of the Town Council and of the Parish Council of four years ago, for they were responsible for formulating this plan, and in actual practice they anticipated the provisions of the Local Government Act.

All will agree that Local Authorities, if for financial reasons only, do not wish in any way to impede the progress of the voluntary hospitals, and it has been the continued policy of the Town Council to encourage and assist the voluntary institutions in their area. With this in view, the Town Council, with the approval of the Directors of the Aberdeen Royal Infirmary and the University Authorities, have appointed the Professors of Medicine, Surgery and Midwifery as consultants within their Municipal Hospitals. The Town Council most heartily welcome the freest access to their Municipal Hospitals to these three professors for these purposes. This access will undoubtedly enhance the efficiency of the municipal hospital service, for nothing so enhances a hospital service as its being a centre for teaching and research. Co-operation carried out on these lines will also be the means of providing wider clinical scope for the training of students.

The main question before the medical profession and the various authorities is the establishment of a sound scheme of co-operation which will ensure the most effective methods of prevention of disease, of its treatment and of the avoidance of overlapping of services.

The most difficult institutional problem that at present faces the Town Council is the institutional treatment of mental defectives, and this matter is dealt with in some detail in the section of this Report dealing with Mental Health Services.

The medical inspection and treatment of school children is now under the jurisdiction of the Public Health Committee, and it is hoped in the near future to augment the number of clinics and to link up the school services with the supervision of the pre-school child. In no area in Scotland can it be said that sufficient attention is paid to prevention of disease in the pre-school child, and the result is that when children entering school are examined it is found that some 20 per cent. of them suffer from defects, most of which are preventable.

(b) **The Regional Medical Scheme.**

In December, 1930, the County of Kincardine definitely entered into the Regional Medical Scheme, and the terms of the arrangement are given hereunder :—

City and County of Aberdeen.

REGIONAL MEDICAL SERVICES.

BASIS OF CO-OPERATION WITH THE COUNTY OF KINCARDINE.

1. Organisation—

- (a) The County Council of Kincardine (hereinafter referred to as "the County Council") shall retain its autonomy as a Public Health Unit.
- (b) The County Council shall retain its own Public Health Committee, responsible to its parent body.
- (c) The Regional Medical Service instituted by the Aberdeen Town Council and the County Council of Aberdeen shall, on terms to be agreed upon, provide supervisory and specialist services to the County Council in the manner hereinafter set forth.
- (d) The Town Council of Aberdeen shall provide institutional treatment in special cases, to be paid for in the manner hereinafter provided.

2. Staff—

- (a) The Chief Regional Medical Officer shall, under the County Council, have administrative control of the Health Services in the County.
- (b) The Regional Specialists in (i) Tuberculosis, (ii) Infectious Diseases, (iii) Maternity and Child Welfare, and (iv) School Medical Services, shall be at the disposal of the County Council for consultative purposes. Bacteriology services will continue to be furnished to the County by the Town Council on agreed terms as heretofore.
- (c) The County Council shall, after consultation with the Chief Regional Medical Officer, appoint a full-time Deputy Medical Officer.

- (d) The Deputy Medical Officer shall work under the Chief Regional Medical Officer and in co-operation with the Specialists above referred to. He shall perform general Public Health work, including the routine work of the Health Services referred to in Sub-heading (b) hereof.
- (e) The Deputy Medical Officer shall have general charge of the Infectious Diseases Hospital at Stonehaven.

3. Institutions—

The Infectious Diseases Hospital at Stonehaven shall be retained for routine treatment.

4. Finance—

- (a) The County Council shall pay £200 per year for the supervisory and Specialist services above referred to, the amount of such payment being in the light of practical experience gained in the working of the Scheme, subject to revision at the end of any completed year during the currency of this arrangement. The said sum shall be payable annually, on or before 15th June, in respect of the previous year or part thereof ended 31st May. The County Council shall also pay the travelling and subsistence expenses of the Regional Medical Staff when engaged in duty within their area.
- (b) The Deputy Medical Officer shall be remunerated by the County Council at the rate of £600-£750 per annum.
- (c) The maintenance charges payable by the County Council in respect of all Institutional treatment in Municipal Hospitals shall be on a *per capita* basis at the rates paid annually by the County Council of Aberdeen for similar treatment.

5. Veterinary Services—

The County Council shall co-operate with the Aberdeen Town Council and County Council of Aberdeen in such manner as may be mutually arranged between the several Local Authorities.

6. Duration—

This arrangement will commence to operate from 1st December, 1930, and continue until 31st May, 1935, after which it may be renewed. The details of the arrangement may be modified by consent at any time during the currency thereof. Either party may terminate the Agreement at any time on six months' notice.

Aberdeen, 15th December, 1930.

For hospital and clinical purposes the common medical services of the City of Aberdeen and the Counties of Aberdeen and Kincardine have proved very satisfactory. The admission of cases of tuberculosis to the hospitals belonging to the Town Council and of special infectious cases to the Aberdeen City Hospital has not led to undue congestion in these institutions. The value of the fluidity of the medical staff has been proved, and the co-operation, apart from adding to efficiency, will ultimately prove to be economical. It is generally accepted that if an adequate hospital service is to be evolved the hospital organisation must be on a regional basis and grouped around the medical schools—Glasgow, Edinburgh, Dundee and Aberdeen, with an additional centre at Inverness.

In our existing scheme of co-ordination, the City of Aberdeen and the County of Aberdeen are partners in the arrangement, whereas the County of Kincardine is meantime on a customer basis.

CHAPTER III.

INFECTIOUS DISEASES.

Table I. gives the death-rate from each of the principal infectious diseases since the commencement of registration. In Table II. the number of cases and deaths for each disease is stated for the successive months of the year. Table III. gives the cases of infectious diseases notified in different-sized houses; and Table IV. gives the morbidity and mortality from infectious diseases distributed according to ages and where treated. In Table V. the cases and deaths, together with the case-mortality or percentage of deaths to sicknesses in certain diseases, are supplied for each of the years 1920 to 1930, as also the averages for the 1910-1919 and 1920-1929 decades.

DISEASES WITH A SPECIFIC PROPHYLAXIS.

Small-pox.

On 4th June, 1930, a female millworker, aged 30 years, who had sickened on 29th May, was admitted to the City Hospital as a case of measles. Immediately after admission it was evident that the case was one of small-pox of a severe type. She was forthwith transferred to the County of Aberdeen Infectious Diseases Hospital at Summerfield, which was at once cleared of other infectious cases and reserved for cases of small-pox.

Along with the patient, the other members of her family, 8 in number, all of whom were over 10 years of age and were vaccinated in infancy and re-vaccinated on 4th June, were removed to Summerfield Hospital. Re-vaccination was successfully performed in all of the contacts except one young woman who had four definite infant vaccination marks. In view of the successful vaccination, and for domestic reasons, it was decided that it would be safe to discharge the contacts from Summerfield Hospital before the completion of the incubation period, provided that they were visited daily by one of the medical staff of the public health department, in order that any of them who sickened of small-pox might be forthwith removed to hospital.

The second case in this household, a male adult, aged 26 years, who was removed from his home to hospital, had been in hospital from 4th to 13th June. Apparently, he sickened on 11th June while still in hospital, but denied that he was suffering from headache or backache. On 14th June it was evident that he was suffering from a mild form of small-pox, and he was admitted to Summerfield Hospital at midnight on that day. In other words, he was re-admitted to hospital on the day after he was sent home; after returning to Summerfield Hospital as a case of small-pox, he admitted that he had been untruthful in his assertion that headache and backache were absent.

The third case removed to hospital was a child of 11 years of age; she had no prodromal symptoms, but a rash was observed on 17th June, and on that day she was removed to Summerfield Hospital. This proved not to be a case of small-pox, but one of vaccinal eruption.

The fourth case removed to hospital and the third case of small-pox in this family was the mother of the first patient. Her re-vaccination had taken; she had no headache nor other prodromal symptoms. She was notified on 19th June or fifteen days after re-vaccination had been performed. This case was of very mild character, but there were several shotty papules on the forehead, 2 pustules on the right ankle and one pustule on the right wrist. If we assume that she was infected on 4th June, the last date of contact with the first case, the eruption appeared on the fifteenth day after contact. This case was undoubtedly an extremely mild attack of small-pox running concurrently with vaccination. Had the possibility of infection not been known the case would certainly have been missed.

Thus, in one family there were 3 actual cases. All 4 persons made complete recovery.

It has already been stated that the original case was admitted to the City Hospital as one of measles, and consequently vaccination was insisted on in respect of the other patients in the City Hospital, whatever the disease might be from which they were suffering. Three patients in the City Hospital refused to be vaccinated, and one of these was a case who was confined on 5th May, 1930, and was admitted to the Aberdeen City Hospital suffering from puerperal pyrexia on 19th May; on the 24th May she developed phlegmasia alba dolens. This woman was in a ward adjacent to that in which the original small-pox case was accommodated, the two wards being separated by a corridor and a bathroom. Thus vaccination and re-vaccination of all patients in the City Hospital was immediately proceeded with, and those who refused to be vaccinated were sent home. This particular patient refused to be vaccinated on 4th June, and again refused on the following day. She was, therefore, sent home on 5th June, with strict injunctions that she should keep in touch with her family doctor, who, on the same day, was officially notified of the occurrence of small-pox in the City. This the patient undertook to do. This patient removed temporarily along with an unmarried sister to a village in Kincardineshire, where she was visited by her family doctor, who, on 17th June, discovered one or two small spots on her forehead, but no diagnosis of infectious disease was made. The unmarried sister went to a village in Aberdeenshire on 26th June. She sickened on 2nd July and was removed to Summerfield Hospital on 8th July, where she died on 12th July. It was then recognised that the case suffering from phlegmasia alba dolens was a case of small-pox. Whenever the true nature of the disease was ascertained, the County Authorities in Kincardineshire were communicated with, and the necessary disinfection of premises, vaccination and re-vaccination of contacts were carried out.

By the beginning of August no further cases had appeared, and it was presumed that the outbreak was over, but at the end of the month a further batch of five cases occurred, but fortunately all were of the mild variety with sparse eruptions. These five cases were all relatives, fellow-workers or neighbours of an undertaker who died on 18th August, the death having been certified as due to an uninfected disease. This undertaker had assisted at the funeral arrangements of the Aberdeenshire case who died in Summerfield Hospital, but the actual coffining of the patient was carried out with meticulous care by medical members of the City Public Health Department. Notwithstanding, it would seem that he must have suffered from small-pox and been the source of infection in the last batch of five cases. From careful investigation of the history, it would appear that the undertaker had not sickened until more than a month after he had assisted at the funeral arrangements of the fatal case, and in these circumstances it is unlikely that he was infected on that occasion. Nevertheless, all attempts to trace the source of his infection failed.

The small-pox outbreak, therefore, involved 11 cases, 10 of whom were referable to the City of Aberdeen, with fatal termination in one case.

In the course of the outbreak, upwards of 2,000 persons were vaccinated or re-vaccinated.

Apart from this outbreak, which was of a definitely severe type of small-pox, no other cases of small-pox were reported in Scotland during 1930.

Vaccinia.

Table VI. on page 40 shows the percentage of the total surviving children at the end of the calendar year following the year of birth who have remained unvaccinated in each year from 1907 to 1929. In 1929 the proportion of children thus escaping vaccination was 9.1 per cent., as against 9.4 in 1928.

Plague.

No cases during 1930.

Scarlet Fever.

In 1930, 344 cases were notified, as compared with 424 cases in 1929. The case mortality in 1930 was 0.6, as against 0.5 in 1929. During the 1920-1929 decennium, the average yearly number of cases was 530, and the case-mortality, 1.1.

Diphtheria.

Of this disease, 505 cases were notified in 1930, as compared with 410 cases in 1929. The case-mortality for 1930 was 2.4 per cent., as against 5.0 per cent. in 1929. The annual average number of cases during the 1920-1929 decennium was 399, with a case-mortality of 4.8 per cent.

Of contacts bacteriologically examined, 0.8 per cent. of the swabbings gave a positive finding. During the 1920-1929 decennium, the percentage of positive swabbings averaged 1.7.

TABLE I.—ABERDEEN—DEATHS AT ALL AGES FROM SELECTED CAUSES
(per 100,000 of population).—*Years 1856-1930.**

Year	Small-pox	Scarlet Fever	Diphtheria and Croup	Measles	Whooping Cough	Influenza	Typhus Fever	Typhoid and Paratyphoid Fever	Tuberculous Disease		Dis. of Digest. Sys. (incl. Diarrhea)	Cancer and other Malignant Diseases	Bronchitis	Pneumonia	Dis. of the Circ. System, * excluding Coronary Arteriosclerosis and Embolism & Thrombosis
									Respiratory	Other Tuberculous					
1930	1	1	7	14	9	6	0	0	53	21	81	152	50	99	270
1929	0	1	13	0	8	44	0	0	57	27	79	170	79	150	293
1928	0	3	9	31	23	13	0	1	71	34	80	155	58	91	251
1927	0	2	9	1	9	26	0	0	66	35	74	145	74	101	228
1926	0	4	13	13	9	21	0	0	75	40	93	133	55	80	209
1925	0	9	14	17	34	11	0	0	97	27	83	149	59	76	193
Average 1925-1929	0	4	12	12	17	23	0	0·2	73	33	82	150	65	100	235
1924	0	2	7	35	45	34	0	1	91	44	63	145	85	90	215
1923	0	2	5	26	3	7	0	2	80	43	87	132	68	76	196
1922	0	6	9	88	63	64	0	0	89	26	78	153	93	129	191
1921	0	5	23	1	1	18	0	0	89	17	94	129	96	98	193
1920	0	2	17	26	17	34	0	1	98	32	92	130	104	129	169
Average 1920-1924	0	3	12	35	26	31	0	1	89	32	83	138	90	104	193
„ 1916-1920	0	6	16	22	23	73	0	3	106	43	87	121	99	122	178
„ 1911-1915	0·2	33	42	56	32	16	0	4	111	49	124	116	101	128	184
„ 1906-1910	0	6	15	26	42	20	0	2	116	61	115	103	105	116	180
„ 1901-1905	0·1	8	9	41	47	20	2·6	3·6	138	69	162	87	145	125	179
„ 1896-1900	0	23	18	35	53	29	0·2	9	167	70	210	87	172	109	167
„ 1891-1895	0·4	21	22	63	52	56	1·0	10	181	72	190	81	210	100	156
„ 1886-1890	0·8	14	10	80	66	9	1·4	15	184	67	202	68	216	100	175
„ 1881-1885	0·2	13	15	36	67	1	6	13	264	74	185	69	251	82	159
„ 1876-1880	0·6	35	30	28	66	2	19	29	223	101	194	61	286	72	146
„ 1871-1875	48	68	30	53	68	5	20	35	243	107	214	56	281	60	136
„ 1866-1870	3·6	71	5	50	62	8	62	49	298	130	259	59	238	70	122
„ 1861-1865	36	93	49	51	62	12	176		274	128	280	57	220	59	122
„ 1856-1860	40	118	54	70	69	12	109		322	179	203	56	182	58	111

* Corrected or transferred deaths in 1904 and subsequent years.

† From 1911 onwards.

TABLE II.—PROGRESS OF INFECTIOUS DISEASES DURING PRECEDING TWELVE MONTHS.

DISEASE.		1930												Whole Year
		Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	
A. Compulsorily Notifiable.														
Smallpox, ...	{ Cases	...	...	...	...	3	1	5	1	...	...	...	10
	{ Deaths	...	...	...	...	...	...	1	...	...	...	...	1
*Chickenpox, ...	{ Cases	98	89	114	106	105	124	87	44	44	18	15	866	
	{ Deaths	...	...	...	...	...	...	...	...	...	...	...	...
Scarlet Fever, ...	{ Cases	23	14	33	38	29	24	26	26	43	35	34	344	
	{ Deaths	1	...	...	...	...	...	...	...	...	1	...	2
Diphtheria, ...	{ Cases	67	70	65	44	42	27	17	20	31	46	41	505	
	{ Deaths	1	1	1	2	1	1	...	...	1	2	2	12
Typhus Fever ...	{ Cases	...	...	...	...	...	...	...	...	...	...	...	...
	{ Deaths	...	...	...	...	...	...	...	...	...	...	...	...
Enterica Infections	{ Cases	...	...	2	...	1	1	1	1	...	1	1	8
	{ Deaths	...	...	...	...	...	...	...	...	...	...	...	...
Dysentery ...	{ Cases	4	8	12	15	9	...	6	12	10	7	6	91	
	{ Deaths	...	...	...	...	...	...	...	1	1	...	...	3
Acute Poliomyelitis,	{ Cases	...	...	1	...	...	...	...	...	...	...	...	1
	{ Deaths	...	...	...	1	...	...	...	...	...	...	...	1
Epidemic Cerebro-	{ Cases	...	...	1	...	...	...	...	...	...	...	...	2
Spinal Meningitis,	{ Deaths	1	...	...	...	1	...	1	...	...	...	...	3
Epidemic Encephal-	{ Cases	...	...	...	...	...	...	...	1	...	...	...	1
itis	{ Deaths	...	...	...	...	...	...	...	...	...	...	...	...
Acute Pneumonia	{ Primary Cases	61	58	80	72	63	40	21	24	32	24	45	655	
	{ Deaths	13	7	13	8	11	11	5	6	3	...	12	100	
	{ Influen- zal Deaths	3	1	...	1	1	1	...	...	...	...	3	12
Tubercle	{ Pulmon- ary Cases	10	9	14	17	7	8	10	12	16	11	9	128	
	{ Deaths	9	7	9	10	6	4	2	8	4	8	10	85	
	{ Other Cases	9	7	5	9	5	7	6	4	4	6	6	71	
	{ Deaths	6	5	2	6	3	2	3	1	1	5	1	34	
Erysipelas ...	{ Cases	15	16	18	13	12	6	14	8	8	13	10	144	
	{ Deaths	...	...	...	3	2	...	...	3	1	...	...	11
Puerperal Fever, ...	{ Cases	3	8	5	9	6	6	8	6	6	5	6	72	
	{ Deaths	1	1	...	...	...	1	1	1	...	...	...	5
†Puerperal Pyrexia	{ Cases	1	...	2	3	2	3	2	1	...	2	3	20	
Ophthal. Neonatorum—	{ Cases	7	7	8	8	8	5	4	4	2	7	2	67	
Malaria, ...	{ Deaths	...	...	...	1	...	1	1	...	1	...	1	5
Infective Jaundice, ...	{ Cases	...	...	...	...	...	...	...	...	...	...	...	...
Plague, ...	{ Deaths	...	...	...	...	...	...	...	...	...	...	...	...
B. Not Compulsorily Notifiable.														
†Measles, ...	{ Cases	6	5	4	8	11	6	12	20	227	851	909	2461	
	{ Deaths	...	...	...	...	...	...	...	...	...	5	10	23
German Measles, ...	{ Cases	...	...	...	...	1	...	...	2	2	3	...	9
	{ Deaths	...	...	...	...	...	...	...	...	...	...	...	...
†Whooping Cough,	{ Cases	80	50	61	58	33	16	4	11	16	12	18	375	
	{ Deaths	2	3	4	2	1	1	...	...	2	...	...	15
TOTAL, ...	{ Cases	387	343	425	402	335	278	221	201	443	1036	1110	5847	
	{ Deaths	34	22	29	32	25	20	12	21	17	16	36	297	
Influenza, excluding Influenzal Pneumonia,.....	{ Deaths	0	1	1	0	0	1	1	1	0	0	3	8	

*Compulsorily notifiable from 25th March, 1927.

§ Corrected for transfers.

†Compulsorily notifiable from 1st October, 1929.

‡ Compulsorily notifiable from 1881 to 1903; now reported mainly by School Attendance Officers.

TABLE III.—ABERDEEN.—CASES OF INFECTIOUS DISEASES NOTIFIED IN DIFFERENT-SIZED HOUSES IN YEAR 1930.

DISEASE	Number of Cases in Houses of					Insti- tutional or not stated	Case Rate per 1,000 Houses of				
	1 Room	2 Rooms	3 Rooms	4 Rooms	5 Rooms and up- wards		1 Room	2 Rooms	3 Rooms	4 Rooms	5 Rooms and up- wards
A. Compulsorily Notifiable.											
Small-pox, . . . .	...	6	4	...	...	...	...	1	0·4	...	...
Scarlet Fever, . .	28	134	75	27	40	40	9	10	7	6	8
Diphtheria,	30	219	136	46	40	34	9	17	13	11	8
Typhus Fever, . .	...	..	.	...	...	...	...	.	...	...	...
Typhoid, . . . .	...	2	...	...	...	1	...	0·1	..	...	...
Paratyphoid "B," .	...	1	1	1	1	1	...	0·1	0·1	0·2	0·2
Dysentery,	5	36	21	4	2	23	2	3	2	1	0·4
Acute Poliomyelitis, .	...	1	..	...	..	...	..	0·1	...	...	...
Epidemic Cerebro Spinal Meningitis, . . .	...	2	...	...	...	...	...	0·1	...	...	...
Epidemic Encephalitis, .	...	...	...	...	...	1	...	...	...	...	...
Acute Primary Pneu- monia,	103	307	148	39	35	23	32	23	14	9	7
Acute Influenzal Pneu- monia,	1	3	3	2	3	..	0·3	0·2	0·3	1	1
Respiratory Tuberculosis, .	8	29	51	13	4	23	3	2	5	3	1
Other Tuberculosis, . .	6	32	18	7	4	4	2	2	2	2	1
Erysipelas,	10	53	41	12	10	18	3	4	4	3	2
Puerperal Fever, . .	7	22	12	2	3	26	2	2	1	1	1
Puerperal Pyrexia . .	2	9	3	...	...	6	1	1	0·3	..	...
Ophthalmia Neonatorum, .	24	22	12	4	...	5	8	2	1	1	...
Malaria, . . . .	...	...	4	...	1	...	...	...	0·4	...	0·2
Chicken Pox,	52	335	230	71	158	20	16	25	22	17	31
B. Not Compulsorily Noti- fiable											
Measles,	255	1182	583	201	116	124	80	90	55	48	23
German Measles, . .	1	5	2	1	...	...	0·3	0·4	0·2	0·2	...
Whooping Cough, . .	53	193	101	17	7	4	17	14	10	4	1
Total,	585	2593	1445	447	424	353	185	197	138	107	85

TABLE IV.—ABERDEEN.—MORBIDITY AND MORTALITY OF INFECTIOUS DISEASES
DURING 1930.

DISEASE	NO. OF CASES AND DEATHS AT VARIOUS AGE-PERIODS								CASES REMOVED FOR INSTITUTIONAL TREATMENT			Cases not removed to Hospital.
	At all Ages	Under 1 year	1-5 years	5-15 years	15-25 years	25-45 years	45-65 years	65+ years	Municipal Hospital	Hospitals	Other Institutions	
A. Compulsorily Notifiable												
Small-pox	10	...	...	...	3	5	2	...	...	...	9	1
Deaths	1	...	...	...	...	...	1	...	...	...	...	1
Scarlet Fever	344	4	94	184	40	19	1	2	315	...	1	28
Deaths	...	...	1	1	...	...	...	...	...	...	...	...
Diphtheria	505	6	123	276	64	28	8	...	497	...	...	8
Deaths	12	1	5	5	1	...	...	...	12	...	...	...
Typhoid and Paratyphoid	8	...	...	1	7	...	...	...	8	...	...	...
Deaths	...	...	...	...	...	...	...	...	...	...	...	...
Dysentery	91	8	37	23	4	11	7	1	27	...	15	49
Deaths	3	2	...	...	...	1	...	...	3	...	...	...
Acute Poliomyelitis	1	...	1	...	...	...	...	...	1	...	...	...
Deaths	1	...	1	...	...	...	...	...	1	...	...	...
Epidemic Cerebro Spinal Meningitis	2	1	1	...	...	...	...	...	2	...	...	...
Deaths	3	1	1	1	...	...	...	...	3	...	...	...
Epidemic Encephalitis	1	...	...	...	...	1	...	...	...	...	1	...
Deaths	...	...	...	...	...	...	...	...	...	...	...	...
Acute Pneumonia—	...	...	...	...	...	...	...	...	...	...	...	...
(a) Primary	665	112	166	127	63	75	73	39	18	301	61	275
Deaths	100	36	13	1	4	7	21	18	2	32	12	54
(b) Influenzal	12	1	1	1	5	1	2	1	...	...	...	12
Deaths	2	...	...	...	...	...	1	1	...	...	...	2
Tuberculosis Diseases—	...	...	...	...	...	...	...	...	...	...	...	...
(a) Respiratory	128	...	4	12	28	57	25	2	36	54	8	30
Deaths	85	...	2	5	11	37	25	5	13	9	11	52
(b) Other	71	3	20	22	11	8	4	3	15	31	7	18
Deaths	34	3	12	6	3	3	7	...	9	6	10	9
Erysipelas	144	5	9	14	46	47	14	...	55	...	4	85
Deaths	11	2	...	1	1	1	5	...	3	1	1	6
Puerperal Fever	72	...	...	24	47	1	...	...	65	...	1	6
Deaths	5	...	...	1	4	...	...	...	5	...	...	...
Puer-Pyrexia	20	...	...	6	14	...	...	...	10	...	3	7
Ophthalmia Neonatorum	67	67	...	...	...	...	...	...	8	...	1	58
Deaths	5	...	...	1	4	...	...	...	1	...	...	4
Malaria	866	45	260	538	16	6	1	...	7	...	6	853
Deaths	...	...	...	...	...	...	...	...	...	...	...	...
Chicken Pox	...	...	...	...	...	...	...	...	...	...	...	...
B. Not Compulsorily Notifiable												
Measles	2461	104	615	1718	14	8	1	1	110	...	2	2349
Deaths	23	11	12	...	...	...	...	...	8	...	...	15
German Measles	9	...	...	9	...	...	...	...	...	...	...	9
Deaths	...	...	...	...	...	...	...	...	...	...	...	...
Whooping Cough	375	61	161	152	...	1	...	...	21	...	1	353
Deaths	15	11	3	1	...	...	...	...	1	...	1	13
Total	5847	417	1492	3072	300	331	172	63	1196	386	120	4145
Deaths	297	67	50	21	21	53	56	29	62	48	35	152

TABLE V.—ABERDEEN—MORBIDITY AND MORTALITY OF INFECTIOUS DISEASES
(*Excluding Tuberculosis*)
DURING EACH YEAR FROM 1920 TO 1930.
(*Not corrected for transferred deaths*)

DISEASE	1930	1929	1928	1927	1926	1925	1924	1923	1922	1921	1920	ANNUAL AVERAGE.	
												1920 to 1929	1910 to 1919
A. Compulsorily Notifiable													
Small-pox,	No. of Cases,	10	1	0	0	0	1	1	1	0	0	0.4	1.4
	No. of Deaths,	1	0	0	0	0	0	0	0	0	0	0.0	0.1
	Percent. of Deaths	9.1	0	0	0	0	0	0	0	0	0	0.0	7.1
Scarlet Fever, ...	No. of Cases,	344	424	728	702	843	712	197	271	310	706	409	530.2
	No. of Deaths,	2	2	5	3	8	15	3	4	9	8	4	6.1
	Percent. of Deaths	0.6	0.5	0.7	0.4	0.9	2.1	1.5	1.5	2.9	1.1	1.0	1.1
Diphtheria,	No. of Cases,	505	410	458	303	223	432	286	189	292	733	560	398.6
	No. of Deaths, ...	12	20	15	15	20	22	11	8	14	36	29	19.0
	Percent. of Deaths	2.4	5.0	3.3	5.0	6.2	5.1	3.8	4.2	4.8	4.9	5.2	4.8
Typhus Fever, ...	No. of Cases,	0	0	0	0	0	0	0	0	0	0	0.0	0.3
	No. of Deaths, ...	0	0	0	0	0	0	0	0	0	0	0	0.0
	Percent. of Deaths	0.0	0	0	0	0	0	0	0	0	0	0	0.0
Typhoid and Para- typhoid,	No. of Cases,	8	7	16	7	3	40	9	21	8	7	8	12.6
	No. of Deaths, ...	0	0	1	0	0	0	1	3	0	0	2	0.7
	Percent. of Deaths	0.0	0	6.3	0	0	0	11.1	14.3	0	0	25.0	5.6
†Dysentery,	No. of Cases,	91	66	97	48	44	15	2	0	6	24	17	31.9
	No. of Deaths, ...	3	3	1	4	1	0	0	0	1	7	4	2.1
	Percent. of Deaths	3.3	4.5	1.0	8.3	2.3	0	0	0	16.7	29.2	23.5	6.4
*Acute Polio- myelitis,...	No. of Cases,	1	2	2	3	5	5	6	0	9	8	5	4.5
	No. of Deaths, ...	1	1	0	0	0	0	0	0	0	2	0	0.3
	Percent. of Deaths	100	50	0	0	0	0	0	0	0	25	0	6.7
Ep.Cerebro- Spinal Meningitis,	No. of Cases,	2	4	4	2	3	1	4	5	3	5	3	3.4
	No. of Deaths, ...	3	3	3	2	2	0	3	3	2	3	1	2.2
	Percent. of Deaths	150	75	75	100	66.7	0	75	60	66.7	60	33.3	64.7
‡Epidemic Encephalitis	No. of Cases, ...	1	3	4	1	0	9	7	0	0	3	...	...
	No. of Deaths, ...	1	1	0	0	0	0	3	0	0	1	...	...
	Percent. of Deaths	100	33.3	0	0	0	0	42.9	0	0	33.3	...	...
+Acute Pneu- monia,	Pri- mary, { No. of Cases, ...	655	869	485	579	377	497	383	335	404	354	393	467.6
	Infu- enzal { No. of Deaths, ...	100	184	112	124	97	102	121	107	179	131	190	134.7
	No. of Cases, ...	12	74	34	136	57	39	77	17	141	56	87	71.8
Erysipelas,	No. of Deaths, ...	2	35	11	21	13	6	29	6	64	10	32	22.7
	Percent. of Deaths	16.7	47.2	32.4	15.5	22.8	15.8	37.6	35.3	45.4	17.9	36.8	31.6
	No. of Cases, ...	144	132	119	95	120	124	92	110	110	170	158	123.0
Puerperal Fever, ...	No. of Deaths, ...	11	10	6	2	5	9	4	4	11	4	6	6.1
	Percent. of Deaths	7.6	7.6	5.0	2.1	4.2	7.3	4.3	3.6	10.0	2.4	3.8	5.0
	No. of Cases, ...	72	49	48	38	36	18	15	15	16	13	13	26.1
+Puerperal Pyrexia	No. of Deaths, ...	5	7	10	9	8	10	8	8	13	6	5	8.4
	Percent. of Deaths	6.9	14.3	20.8	23.7	22.2	55.6	53.3	53.3	81.3	46.1	38.5	32.2
	No. of Cases, ...	20	21	25	...	...	...	...	...	...	...	...	...
*Ophthalmia Neonatorum	No. of Deaths, ...	67	70	51	54	48	59	69	63	47	100	112	67.3
	Percent. of Deaths	...	...	...	...	...	...	...	...	...	...	...	...
	No. of Cases, ...	5	4	7	4	6	4	3	3	5	55	138	22.9
†Malaria, ...	No. of Deaths, ...	0	0	0	0	0	1	0	0	0	1	1	0.3
	Percent. of Deaths	0	0	0	0	0	25	0	0	0	1.8	0.7	1.3
	No. of Cases, ...	0	0	0	0	0	0	...	...	...	...	...	...
‡Infective Jaundice,	No. of Deaths, ...	0	0	0	0	0	0	...	...	...	...	...	...
	Percent. of Deaths	...	...	...	...	...	...	...	...	...	...	...	...
	No. of Cases, ...	0	0	0	0	0	...	...	...	...	...	...	...
§Plague, ...	No. of Deaths, ...	0	0	0	0	0	...	...	...	...	...	...	...
	Percent. of Deaths	...	...	...	...	...	...	...	...	...	...	...	...
	No. of Cases, ...	866	466	397	336	265	266	318	255	46	725	256	333.0
§Chicken Pox ...	No. of Deaths, ...	0	1	0	0	0	0	0	1	0	3	0	0.5
	Percent. of Deaths	0	0.2	0	0	0	0	0	0.4	0	0.4	0	0.3
	B. Not Compulsorily Notifiable												
Measles, ...	No. of Cases,	2461	48	1812	199	991	1322	1488	594	3684	44	1072	1125.4
	No. of Deaths, ...	23	0	50	1	20	27	56	41	142	2	41	38.0
	Percent. of Deaths	0.9	0	2.8	0.5	2.0	2.0	3.8	6.9	3.9	4.5	3.8	3.4
German Measles,	No. of Cases, ...	9	15	65	22	25	362	111	2	11	4	73	69.0
	No. of Deaths, ...	0.0	0	0	0	0	0	0	0	0	0	0	0.0
	Percent. of Deaths	0.0	0	0	0	0	0	0	0	0	0	0	0.0
‡Whooping Cough, ...	No. of Cases,	375	428	579	395	362	933	1712	87	1444	305	325	657.0
	No. of Deaths, ...	15	13	37	15	15	53	71	5	101	2	28	34.0
	Percent. of Deaths	4.0	3.0	6.4	3.8	4.1	5.7	4.1	5.7	7.0	0.7	8.6	5.2

†Notification commenced Aug., 1919

*Notification commenced May, 1913.

‡Notification commenced Aug., 1921.

aCompulsorily notifiable from Oct., 1929, to Sept., 1931; from July to December, 1923; and from March, 1927 to December, 1930.

§Compulsorily notifiable from May, 1920, to Sept., 1921; from July to December, 1923; and from March, 1927 to December, 1930.

|| Compulsory notification ceased Feb., 1903

SUSCEPTIBILITY TESTS AND ACTIVE IMMUNISATION AGAINST DIPHTHERIA AND SCARLET FEVER.

Table VII. relates to the immunisation services provided by the staff of the Health Department for the year 1930 :—

TABLE VII.—DIPHTHERIA AND SCARLET FEVER.—SUSCEPTIBILITY TESTS AND ACTIVE IMMUNISATION BY CITY HEALTH DEPARTMENT, YEAR 1930.

	City Hospital.				Child Welfare Centres.	Schools.		Out-Patients.		
	Staff.		In-Pats.			Pos.	Neg.	Pos.	Neg.	
	Pos.	Neg.	Pos.	Neg.	Pos.					Neg.
Schick Tests,	20	70	47	61	1	...	113	125	205	69
Dick Tests,	38	52	195	174	12	21	128	110	176	98
Diphtheria Prophylactic Injections,	8		270		...		127		105	
Scarlatina Prophylactic Injections,	19				10		160		28	
Combined Diphtheria and Scarlatina Prophylactic Injections	22		50		226		1,394		542	

Typhoid and Paratyphoid Fevers.

Three cases of typhoid and 5 of paratyphoid B. fever were reported in 1930, none of which ended fatally. In none of the cases was the source of infection determined. In the preceding decennium, there was an annual average of 13 cases and 1 death.

Details of an investigation into the Serological Diagnosis of these Fevers appear in Chapter I. of this Report.

Venereal Diseases.

A detailed analysis of cases of venereal diseases which have come to the knowledge of the Health Department is given in the section of this Report dealing with the Venereal Diseases Services. During the year there were 179 fresh cases of syphilis, 441 of gonorrhoea, 10 of soft chancre, and 9 of mixed infections.

Ophthalmia Neonatorum.

This disease was responsible for 67 cases during 1930. The average annual number during the preceding ten years was also 67.

DISEASES SPREAD BY DISCHARGES FROM THE MOUTH AND NOSE.

Measles.

The number of cases of measles coming to the knowledge of the Health Department in 1930 was 2,461, with 23 deaths, as against 48 cases and no deaths in the preceding year. Of the 23 deaths, 11 occurred in children under one year, and 12 in the age period 1-5 years. The epidemic, which commenced in September, reached its height in November with 909 cases and 10 deaths during that month. The case-mortality for 1930 was 0.9, as against an average of 3.4 for the preceding ten years.

German Measles.

Nine cases of this disease were brought to the knowledge of the Health Department, as against an average of 69 for the preceding decennium. There were no deaths.

Whooping Cough.

Of this disease, 375 cases were reported, with 15 deaths, giving a case-mortality of 4.0 per cent. Of the 15 deaths, 11 occurred in children under one year of age. The average annual number of cases during the 1920-1929 decennium was 657, with a case-mortality of 5.2.

Acute Primary and Influenzal Pneumonia.

There were 655 cases of primary pneumonia notified in 1930, with 100 deaths. During the preceding ten years, the average annual number of cases was 468, and the average annual number of deaths, 135. Of influenzal pneumonia, there were 12 cases, with 2 deaths, in 1930, as against an average of 72 cases and 23 deaths in the preceding decennium.

Reference may here be made to the special work which is being carried on at Woodend Hospital in connection with the Serum Treatment of certain types of pneumonia.

Influenza.

Influenza is not a compulsorily notifiable disease, apart from influenzal pneumonia. Influenza (apart from influenzal pneumonia) was registered as the cause of 8 deaths during 1930, as against 35 deaths in 1929.

Meningococcic Meningitis.

Of this disease, 2 cases were notified in children aged 10 months and 1 year respectively. Both cases proved fatal. There was no discoverable relationship between the cases. During the preceding ten years, the average annual number of cases was 3.4, and the average annual number of deaths, 2.2.

Acute Poliomyelitis.

One case of this disease was notified in a child aged 2 years, and proved fatal. This child was treated in the City Hospital. The immediate cause of death was bulbar paralysis.

Epidemic Encephalitis.

Of this disease, only one case came to the knowledge of the Department during 1930. Symptoms of encephalitis had commenced 6 years previously, and death was certified as due to encephalitis lethargica and pulmonary tuberculosis. The patient at the date of death was resident in Kingseat Mental Hospital. In 1929, 3 cases of this disease were reported and in 1928, 4 cases.

Tuberculosis.

As has been stated in previous Reports, many investigations have shown that only about 1 per cent. of cases of pulmonary and generalised tuberculosis in man are due to the bovine type of the bacillus, whereas in some 66 per cent. of tuber-

culosis of the neck glands, in 50 per cent. of abdominal tuberculosis, in 50 per cent. of tuberculosis of the skin, in 25 per cent. of tuberculosis of the bones and joints, in 20 per cent. of tuberculosis in the meninges, and in 18 per cent. of genito-urinary tuberculosis, the infection is of the bovine type. Applying these proportions to the various forms of tuberculosis notified in Aberdeen, it is found that, of the 199 cases notified in 1930, 172, or 86 per cent., were infections with the human type of tubercle bacilli, and that 27, or 14 per cent., were infections with the bovine type bacilli. Similarly, of 119 deaths in Aberdeen, from all forms of tuberculosis in 1930, it is estimated that 110, or 92 per cent., of these deaths were due to tubercle bacilli of the human type, and that 9, or 8 per cent., were due to bovine type bacilli.

A detailed analysis of the cases and deaths from tuberculosis in Aberdeen is given in the section of this Report relating to the Tuberculosis Services.

Chicken-pox.

This disease, by order of the Department of Health for Scotland, has been made compulsorily notifiable until December, 1931. During 1930, 866 cases of chicken-pox were notified. There were no deaths.

DISEASES SPREAD BY THE EXCRETA.

Typhoid and Paratyphoid Fevers.

These diseases have already been referred to under the group of diseases for which there is a specific prevention.

Dysentery.

During 1930, there were 91 cases of dysentery notified, of which 40 were of the Flexner bacillus type and 38 of the Sonne bacillus type. There were 3 deaths, 2 in children under one year of age, and 1 in a male adult aged 43 years.

DISEASES SPREAD BY CUTANEOUS INOCULATION.

Erysipelas.

During 1930, there were 144 cases of this disease reported, with 11 deaths. In the 1920-1929 decennium, the average annual number of cases was 123, and the deaths, 6.

Scabies.

A record of the number of cases of other inflammatory affections of the skin, including scabies, receiving treatment at the Skin Department of the City Hospital is given in the section of this Report dealing with Municipal Hospital Services (p. 62).

DISEASES ASSOCIATED WITH CHILD-BIRTH.

Puerperal Pyrexia and Fever.

During 1930, 92 cases of puerperal pyrexia were brought to the notice of the Department as having occurred in the City. Of these, 20 were differentiated from puerperal fever, the cause of the rise of temperature being attributed to

bacilluria, mastitis, pneumonia, constipation, etc. Four cases occurred in the practice of midwives, 10 in the practice of private practitioners, and 6 in public institutions. Of the 20 cases, one died from placenta praevia.

Of the 72 cases of puerperal sepsis, 11 occurred in the practice of midwives, all of whom recovered; 34 in the practice of private practitioners with 2 deaths; 26 in the practice of public institutions with 3 deaths; and 1 in a maternity home with recovery. Of the total 5 deaths from puerperal sepsis, 4 were among City cases, and the fifth death was transferred out to the County of Kincardine. Six cases were treated at home, 64 being treated in the Infectious Diseases Hospital, and 2 in other public institutions.

Additional information regarding puerperal pyrexia is given in the section of this Report dealing with Maternity and Child Welfare Services.

Ophthalmia Neonatorum.

During 1930, there were 67 cases of ophthalmia neonatorum, which is equivalent to 20 cases per 1,000 registered births. Additional information regarding ophthalmia neonatorum is given in the section of this Report dealing with Maternity and Child Welfare Services.

INSECT AND VERMIN-BORNE DISEASES.

Typhus Fever, Trench Fever, Infective Jaundice.

No cases during 1930.

Malaria.

Five cases were reported, all of which contracted the infection abroad. There were no deaths.

CHAPTER IV.

ENVIRONMENTAL HYGIENE.

TOWN PLANNING.

Since the issue of the last Annual Report, the Aberdeen and District Joint Town Planning Committee have completed and published their Draft Scheme. In order to comply with the requirements of the Town Planning (Scotland) Act, 1925, it was necessary to notify all those likely to be affected by the proposals of the Committee. Briefly, the Committee dealt with (a) the density of Housing; (b) line and breadth of future roads; (c) widening of existing roads; (d) the preservation of "beauty spots" and of objects of historical and antiquarian value; and (e) the formation of open spaces at suitable intervals within the area dealt with. This meant the sending of some 5,000 letters to proprietors, and there was consequently evoked a good deal of interest, and indeed, some alarm. About 600 objectors lodged objections, but many of these did not adopt an actively hostile attitude to the Scheme but were rather desirous of safeguarding their rights. The Committee in charge have meantime devoted their attention to hearing these objectors, and it follows that some time must elapse before the position is clarified. It may, however, be recorded with satisfaction that, so far, the results have been encouraging because a basis of agreement has generally been reached by friendly discussion and by the adoption of a conciliatory attitude by both sides. As a rule, proprietors have recognised that more is likely to be attained by a far-sighted view than by any haphazard attempt to comply with the strict requirements for the time being.

One prevalent objection to the Committee's outlook is that any high standard of zoning is likely to discourage building, especially in view of the economic pressure of the times. Valuable building ground is sometimes liable to be used for a type of house which is bound ultimately to bring down the value of the estate. By a little give and take and by judiciously reducing the standard of density, most of these objections have been overcome. On the whole, the Committee are gratified with the results of negotiation, and there is no reason to doubt that the cases remaining to be dealt with will be solved in an equally satisfactory manner.

Reference should again be made to the necessity of removing heavy industries and noxious trades outwith the centre of the City and placing them on sites where they will be least objectionable to the inhabitants. Town Planning is an ideal scheme, but it is thoroughly practical and a suitable area should, in the near future, be set aside for such businesses as the slaughtering of cattle and the keeping of pig-styes.

HOUSING CONDITIONS.

A review of the housing situation in the City of Aberdeen appears in the Annual Report of the Sanitary Inspector for the year 1930. A summary of the present position will prove informative.

1. **Number of houses built by private enterprise.**—Without the aid of a subsidy, the number of houses completed in 1930 was 57; with the aid of a subsidy, there were 51 houses completed during the year under review. Thus a total of 108 houses were erected by private enterprise.

2. **Number of houses erected by the Local Authority.**—In 1930, 492 houses were erected by the Local Authority; in 1929—898 houses; in 1928—689 houses; and in 1927—494 houses. Under the Slum Clearance Scheme, 204 dwellings were erected by the end of 1930, and 92 dwellings were in course of erection.

Exclusive of the dwellings erected under the Slum Clearance Scheme, the total number of houses completed within the City since 1919 under the Corporation Housing Schemes is 2,282, and, at the close of the year under review, 432 dwellings were in course of erection, thus making a total of 2,714 additional houses.

3. **Type and Rental of New Houses.**—The room capacity of these 2,714 additional houses is as follows:—

154 houses contain	...	4 rooms.
1,656 ,, ,,	...	3 ,,
904 ,, ,,	...	2 ,,

The respective rentals of these houses, exclusive of rates, are as follows:—4 rooms—£32 10s.; 3 rooms, ranging from £22 to £28, with a cheaper type at £16; and 2 rooms, mostly £13 to £14 (48 houses at £19 and £20).

4. **Sub-let Houses.**—A census of sub-let houses was made in 1926, when it was found that 1,991 families were living in sub-let apartments. Few of these families have found accommodation in the new houses, and, from data available to the Public Health Department, it is estimated that the number of sub-let houses is in the neighbourhood of 2,500.

5. **Overcrowded Houses.**—During 1930, 710 houses were found to be overcrowded, and in 194 was the overcrowding abated. There remained 516 in which the overcrowding was not abated.

6. **Insanitary Dwellings.**—In 1930, no dwellings were closed on account of their being unfit for human habitation, because alternative accommodation could not be provided.

7. **Recommendations regarding houses in Housing Schemes.**—The Medical Officer, Sanitary Inspector, and Housing Director were instructed to examine the houses erected under the Town Council's Housing Schemes with a view to remedying any defects which might be prejudicial to the health of the occupants, and these officials made the following recommendations:—

- (1) Tenants should not occupy houses immediately on completion. A period should elapse during which the houses should be freely ventilated and, if necessary, "fired."
- (2) Each apartment should have a fire or an adequate flue.
- (3) A suitable person or persons should be appointed to ensure that the tenants are exercising proper care in respect of the houses. This recommendation has no reference to the maintenance of structure and surroundings.
- (4) A circular letter should be sent to all tenants in the Housing Schemes, giving advice as to—
 - (a) Ventilation and heating of apartments.
 - (b) Proper use of gas fires.
 - (c) Keeping beds and bedding clear of walls.
 - (d) Keeping clear all sub-floor ventilators.
 - (e) Necessity of refraining from altering the levels of foot-paths on ground adjoining properties, in order to ensure that paths or plots will not be at a higher level than the damp-proof course, and
 - (f) Keeping groove and gratings at entrances clear of silt.

8. Applicants for New Houses, with Medical Certificates.—Almost 1,000 applicants for new houses presented certificates from their family doctors, certifying that, for medical reasons, the provision of new houses was essential. These certificates were carefully considered and investigated by the Medical Officer of Health, but only the applications of clamant cases could be recommended for acceptance. The number of those whose applications were supported by medical certificates greatly exceeded the number of new houses built during the year.

FACTORIES, WORKSHOPS, AND WORKPLACES.

Factories.—Table VIII. is submitted giving details of the administration of the Factory and Workshop Act, 1901. No prosecutions had to be instituted under the Act, but a large number of defects discovered during the routine inspections was remedied.

Workshops.—The number of workshops, exclusive of bakehouses, registered at the end of 1930 was 699, as compared with 727 in 1929.

Excellent work continues to be done by the Sanitary Inspector and his staff in the sanitary control of the workshops of the City. Every workshop is inspected at least once a year, and an effort is made to keep it in accordance with the requirements of the Public Health Act and the Factory and Workshop Acts. Fish-curing and provision-curing works are inspected very frequently, some of them almost daily, the primary object of the visit being the inspection of food. The bulk of the defects found during 1930 had reference to want of cleanliness.

TABLE VIII.—ABERDEEN.—FACTORIES, WORKSHOPS, AND WORKPLACES, 1930.

1.—INSPECTION OF FACTORIES, WORKSHOPS, AND WORKPLACES.

Including Inspections made by Sanitary Inspectors.

Premises	NUMBER OF		
	Inspections	Written Notices	Prosecutions
Factories (including Factory Laundries) . . .	1,539	287	0
Workshops (including Workshop Laundries) . .	2,041	275	0
Workplaces (other than Outworkers' premises) .	42	11	0
TOTAL	3,622	573	0

2.—DEFECTS FOUND IN FACTORIES, WORKSHOPS, AND WORKPLACES.

Particulars	NUMBER OF DEFECTS			Number of Pro-secutions
	Found	Remedied	Referred to H.M. Inspector	
NUISANCES UNDER THE PUBLIC HEALTH ACTS.*				
Want of cleanliness	458	455	0	0
Want of ventilation	6	5	0	0
Overcrowding	0	0	0	0
Want of drainage of floors	0	0	0	0
Other nuisances	88	85	0	0
Sanitary accommodation {	Insufficient	1	2†	0
	Unsuitable or defective	20	18	0
	Not separate for sexes	0	0	0
OFFENCES UNDER THE FACTORY AND WORKSHOP ACTS.				
Illegal occupation of underground bakehouse (s. 101)	0	0	0	0
Other offences	0	0	0	0
(Excluding offences relating to outwork and offences under the Sections mentioned in the Schedule to the Scottish Board of Health (Factories and Workshops Transfer of Powers) Order, 1921.)				
TOTAL	573	565	0	0

* Including those specified in Sections 2, 3, 7, and 8 of the Factory and Workshop Act, 1901, as remediable under the Public Health Acts.

† 1 additional W.C. provided in 1930, notice served in 1929.

In regard to Section 61 of the Factory and Workshop Act, 1901, whereby it is enacted that no woman or girl shall be employed within a factory or workshop within four weeks after she has given birth to a child, it has been ascertained through the Health Visitors that there is no evidence that such persons were so employed in Aberdeen.

Bakehouses.—The bakehouses, of which there were 77 in the City in 1930, as compared with 75 in 1929, were, as usual, inspected every quarter or oftener, and were found, on the whole, to be in a satisfactory condition. Certain sanitary defects in connection with bakehouses were remedied at the suggestion of the Health Department.

Home Workers.—With regard to home workers, the usual routine inspections were made in connection with the sanitary condition of the premises and the prevention of infectious diseases.

Inspection of Plans.—During the year under review, plans of 29 premises, chiefly alterations and additions to existing buildings, were examined and reported on. Certain recommendations in regard to the sanitary requirements of the premises were given effect to prior to the approval of the plans by the Town Council.

OFFENSIVE TRADES.

Slaughter-houses.—At the end of 1930, although there were 5 licensed slaughter-houses within the City, slaughtering took place only in 4.

Other Offensive Trades.—The offensive trades in Aberdeen, within the meaning of the Public Health Act, are concerned chiefly with tallow-melting or oil extracting from ox bones or fish livers, soap boiling, knackerings, hide factoring, and the manufacture of manures and fish meal. At the end of the year, 22 firms were carrying on one or more offensive trades, and the total number of trades so conducted was 37.

New Applications for Establishment of Offensive Trades.—Two applications were received for sanction to extend premises under Section 32 of the Public Health (Scotland) Act, 1897. One application was lodged by the Mutual Fish Products Company, Limited, who applied for sanction to enlarge their premises for storage purposes. The application was approved by the Council, and approval was also given to the installation of a 32 ton "Schlotterhölse" Patent Drier. The other application for which sanction was granted was for the extension of premises in which the business of tallow-melting is carried on at Albert Quay.

Number of Inspections made and manner and conduct of business.—Excluding visits to slaughter-houses, the number of visits to premises in which offensive trades are being carried on was 2,512.

On the whole these offensive trades were conducted in a satisfactory manner. Complaints received were immediately investigated by the sanitary staff, and the proprietors were communicated with in those instances in which the sanitary inspector deemed such a procedure necessary.

ATMOSPHERIC CONDITIONS.

Weather and Disease.—In Table IX. is summarised the state of the weather in Aberdeen for each month throughout the year under review, along with the average for the thirty years 1897-1926.

As regards sunshine, the month which enjoyed the most sunshine was June, with 244 hours for the whole month, or eight hours a day; while the month with the least sunshine was December, with 38 hours for the whole month, or fully one hour a day. The total amount of sunshine for the year under review was much above the average for the years 1897-1926.

TABLE IX.—ABERDEEN.—METEOROLOGICAL RECORD FOR EACH MONTH (From King's College Observatory)

MONTH	YEAR 1930.										AVERAGE FOR THIRTY YEARS, 1897-1926.													
	BAROMETRIC PRESSURE (at 32° F. and Sea Level)					TEMPERATURE OF ATMOSPHERE					MEAN DAILY TEMP. OF GROUND (4 feet below surface)			RAINFALL		SUNSHINE		WIND						
	Absol.		Mean		Inches	Absol.		Mean		°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	DURATION; AND DURATION IN HOURS			Average No. miles per day			
	Lowest		Daily Range			Lowest		Daily Range										N. N. E.	E	S. E.		S. W.	W.	Calim
	Highest	Lowest	Highest	Lowest		Highest	Lowest	Highest	Lowest															
January, . .	30-24	28-53	0-31	53-1	29-1	39-8	7-9	42-1	82	68	1-9	67	29	3	26	306	262	104	31	12	290			
February, . .	30-81	29-11	0-22	48-0	24-1	36-0	8-8	40-6	80	98	1-1	82	31	55	12	82	74	52	66	162	239			
March, . .	30-61	29-03	0-22	56-5	24-6	38-9	10-1	40-0	78	81	1-3	141	39	43	9	34	53	172	92	149	264			
April, . .	30-31	29-26	0-18	54-7	33-6	43-8	7-5	42-3	84	143	3-1	100	23	165	73	70	82	140	39	35	105			
May, . .	30-35	29-43	0-18	68-0	34-5	47-2	10-6	45-3	79	59	1-0	176	35	91	72	55	129	117	76	75	101			
June, . .	30-44	29-43	0-16	76-5	41-5	55-5	13-7	49-3	74	54	1-8	244	46	47	17	45	83	263	114	58	45			
July, . .	30-24	29-23	0-13	72-3	44-8	56-4	10-5	52-4	80	57	1-9	157	29	103	64	53	66	98	28	69	223			
August, . .	30-33	29-17	0-21	72-0	45-5	57-2	9-5	53-5	84	153	6-0	154	33	54	17	85	121	142	32	128	197			
September, . .	30-45	29-01	0-20	67-5	42-8	53-7	7-6	54-0	87	132	4-5	73	19	122	24	104	91	88	31	58	159			
October, . .	30-53	28-89	0-28	59-9	32-4	48-1	9-2	51-5	82	108	3-1	117	37	18	4	14	35	267	108	175	98			
November, . .	30-55	28-77	0-39	60-8	20-7	40-3	9-9	46-9	81	140	3-5	80	33	39	13	16	49	76	106	288	124			
December, . .	30-49	28-85	0-24	55-6	25-8	40-4	8-0	43-7	86	110	4-0	38	18	1	...	...	56	186	198	183	79	
Monthly Average	30-45	29-06	0-23	62-1	33-4	46-4	9-4	46-8	82	100	2-8	119	31	62	25	47	72	159	96	124	113			
Total for Year	...	...	...	...	...	...	...	...	...	1203	33-2	1429	...	738	305	561	865	1907	1152	1484	1355
January, . .	30-53	28-96	0-31	52-8	27-0	39-8	7-6	40-6	83	111	2-5	41	18	6	3	21	101	196	184	123	95			
February, . .	30-39	28-79	0-27	52-8	27-3	39-6	7-2	40-4	82	135	3-0	54	20	29	13	33	129	160	121	106	77			
March, . .	30-43	28-97	0-23	53-8	27-9	40-2	8-9	40-9	79	93	1-7	102	28	68	35	49	72	122	100	137	150			
April, . .	30-41	29-14	0-21	57-4	30-2	42-7	9-6	42-7	80	99	2-2	134	32	50	45	70	115	134	69	94	128			
May, . .	30-33	29-21	0-18	65-4	33-4	47-6	10-7	45-9	79	110	2-9	162	32	82	54	69	83	154	91	79	118			
June, . .	30-36	29-43	0-15	71-1	40-2	53-0	11-7	50-3	77	67	1-6	166	32	65	35	55	78	123	83	171	28			
July, . .	30-30	29-24	0-17	74-6	45-7	57-0	11-1	53-6	80	89	3-4	151	29	46	52	61	95	161	82	93	123			
August, . .	30-33	29-28	0-19	71-1	43-0	55-9	10-8	54-6	80	80	2-3	137	29	40	28	36	65	202	104	122	123			
September, . .	30-39	29-17	0-24	67-1	36-9	51-7	11-5	53-1	81	93	3-3	125	33	42	18	28	51	148	128	145	144			
October, . .	30-46	28-85	0-24	61-6	32-0	46-9	9-5	50-2	83	111	3-3	109	34	46	15	25	57	181	126	137	127			
November, . .	30-50	28-86	0-27	55-0	29-5	41-6	8-3	45-7	83	121	2-7	65	27	24	9	21	46	120	147	167	173			
December, . .	30-53	28-80	0-28	53-3	26-8	39-7	7-9	42-6	83	115	2-7	39	19	18	8	15	32	147	190	165	158			
Monthly Average	30-41	29-06	0-23	61-3	33-3	46-3	9-6	46-7	81	102	2-6	107	28	43	26	40	77	154	119	121	132			
Total for Year	...	...	...	...	...	...	...	...	...	1224	31-6	1285	...	516	315	483	924	1848	1425	1451	1587

To indicate the dominant direction, figure with maximum hours is in thick type. The wind data are now obtained from a new pressure-tube anemograph erected in a more open exposure than that of the previous instrument. The values obtained under the new conditions exceed the previous values by about 20 per cent.

1 "Calms" now include actual calms and occasional light winds. Previously only flat calms were entered as "calms."

TABLE X.—ABERDEEN.—QUALITY OF WATER.—TYPICAL BACILLUS COLL.

Year	Samples from	Absent in 100 c.c. per cent.	Present in 100 c.c. per cent.	Present in 50 c.c. per cent.	Present in 20 c.c. per cent.	Present in 10 c.c. per cent.	Present in 5 c.c. per cent.	Present in 1 c.c. & less per cent.	Remarks
1930	Cairnton Intake—								
	River Water at Intake .	...	...	1	1	5	22	23	
	Aberdeen Tap Water .	39	5	5	3	..	...	...
1929	River Water at Intake .	...	...	2	5	8	11	26	
	Aberdeen Tap Water .	35	12	3	2	...	...	...
1928	River Water at Intake .	...	...	...	1	2	19	30	
	Aberdeen Tap Water .	24	9	4	6	6	3	...	
	Aberdeen Tap Water, 1907, (i.e., before the Water was filtered.)	...	...	13	...	29	33	25	

February was the coldest month, with a temperature of 36.0° F., the warmest month being August, with a temperature of 57.2° F. The difference in temperature between the coldest and warmest months was 21.2° F., which was above the average for the years 1897-1926 (17.4°). The mean temperature for the whole year was 46.4° , the average for preceding years being 46.8° . The mean daily range of temperature, or the difference between the highest and lowest for the day, averaged 9.4 in 1930.

During 1930, the driest month was May, with 1.0 inches of rainfall. August, the warmest month, was distinctly the wettest, with 6.0 inches of rainfall. The total amount of rainfall during the year is slightly above the average for preceding years.

In 1930, the most prevalent winds in Aberdeen were from the south, the least prevalent being north-easterly winds.

WATER SUPPLY.

The instructive table (Table X.) on page 51, measuring in percentages the degree of purity of the water in terms of bacillus coli, provides evidence of the present state of the water as compared with the two previous years.

SUGGESTED ESTABLISHMENT OF A MUNICIPAL CREMATORIUM.

With reference to the suggested establishment of a Municipal Crematorium, the following report was submitted by the Medical Officer of Health :—

Aberdeen, 4th June, 1930.

In terms of remit from Council, viz.:—"That it be remitted to the Public Health Committee to consider and report on the practicability of establishing a Municipal Crematorium in or near the City," I beg to report as follows:—

1. Definition of Cremation.

Cremation, or incineration of the dead, effects in about an hour what, in earth burial, is spread over a number of years, namely, the dissolution of the body into its elements.

2. The Statutory Rules for Cremation.

Cremation was legalised in 1902, and, under the Cremation Act then passed, the Secretary for Scotland was directed to make regulations as to the maintenance and inspection of crematoria and the conditions in which the burning of any human remains might take place in Scotland. It was, however, only in November, 1927, that the Secretary of State issued regulations which, having lain for 40 days before both Houses of Parliament, are now in force. These follow in all essentials the English regulations adopted by the Home Office in 1902 and revised in 1920. Provision is made for the maintenance of the crematorium in good working order and with sufficient attendants. Notice of the opening must be given to the Secretary of State and the Department of Health for Scotland, and the plans and the buildings should be approved by them; nor can cremation be carried out in the case of a person who is known to have left a written direction to the contrary. As an instruction in a will for burial in a family lair in a cemetery might be held to be such a direction, it is most important that those who wish their remains to be cremated should write, date, and sign a formal expression of this wish.

Application for cremation must be made to the Authority by whom the crematorium has been established. Although in Glasgow, for the last 35 years, it has been the practice to accept for this only the signature of the relative or executor, in future, it must be declared before a Justice of the Peace, a Magistrate, or a Notary Public. This may, in some rural

districts, add difficulty and delay at a time when these are most unwelcome, but in cities a J.P. is soon obtained. Forms are given for the application, and also for the certification by the two registered medical practitioners, who must each see and examine the dead body. The second doctor must be of at least five years' standing, and if not one appointed for the purpose by the Cremation Authority, he must be the Medical Officer of Health or his assistant, a police surgeon, a certifying surgeon under the Factory and Workshops Act, a medical referee under the Workmen's Compensation Act, or hold an appointment in a public hospital of not less than twenty beds (in England, fifty beds).

The Cremation Authority must nominate a medical referee, who may be the Medical Officer of Health, and must be of five years' standing and with the necessary experience and qualifications. His duty is to examine the applications and certificates and make such inquiry himself as he thinks necessary, and allow the cremation to take place only when satisfied that the fact and cause of the death have been ascertained, and that there is no suspicion that death has been due to poison, violence, illegal operation, or neglect. Should any suspicious circumstances be disclosed, he must report the matter to the Procurator-Fiscal, and the cremation cannot proceed without the Fiscal's written authority, the Scottish equivalent of the Coroner's finding in England. The Medical Referee can also decline to allow cremation without giving to the applicant any reason for his refusal. Special provision is made for certificates in cases where the death has occurred outside of Scotland.

The procedure is simplified where remains have already been buried for over a year. In such a case, the Sheriff ordering exhumation may determine the conditions in which cremation will be allowed.

One of the most useful provisions in the interests of public health is that, where a person dies of plague, yellow fever, cholera, anthrax, or smallpox, and application for cremation is made with consent of the Local Authority, all the regulations may be dispensed with and cremation may take place even against the written instructions of the dead. During an epidemic, the Secretary of State may modify or suspend the regulations, which also do not apply to a still-born child, unless any suspicious circumstances are disclosed.

After cremation, the ashes are to be given to the relatives to be disposed of as they prefer. If not, they are to be "decently interred" in a burial ground or ground reserved for such remains. A registrar must keep a record of the cremations carried out and what is done with the ashes.

A Local Authority has to obtain Parliamentary powers to spend money on the provision of a crematorium within its limits.

3.—Advantages of Cremation, as Stated by Cremationists.

- (a) The disposal of the dead by cremation is preferable to ordinary burial, in that the possibility of pollution to water and contamination of the air are reduced to a minimum.
- (b) It is less expensive than ordinary burial—the present charges being about £12—and, if adopted more extensively, the present rates could be very materially reduced.
- (c) Cremation interferes with no Christian religious ceremony or rites.
- (d) Cremation affords facilities for the return to the ancient practice of interment in churches without danger.
- (e) It obviates the possibility of premature burial.
- (f) Gradual decomposition, as in ordinary burial, is noxious, and, in the case of persons who have died of smallpox, cholera, and like diseases, frequently dangerous.
- (g) There is no medico-legal objection to cremation.
- (h) When it is desired to arrange for interment in a cemetery at a distance or abroad, cremation effects considerable saving in the cost of and arrangements for transport.
- (i) The certificates and declarations required under the regulations are so stringent as to provide a more effective safeguard against foul play, and thus a protection of society against secret crime is provided.
- (j) Cremation has been recognised by Parliament.

4.—Modern Public Health Attitude to Cremation.

Sir Oliver Lodge has affirmed that, for town dwellers, cremation is clearly the best and safest method of disposal, and this finding may shortly be stated to be the attitude of modern public health opinion in the matter. This finding is based on purely medical and sanitary grounds, and takes no cognisance of possible sentimental and religious objections which, in practical application, have to be considered, along with the general health consciousness of the community.

5.—Position in Edinburgh and Glasgow.

After over twenty years of persistent propaganda, a crematorium was established in Edinburgh. On many occasions during that time, motions in favour of the establishment of a Municipal Crematorium in that city were considered by the Town Council, but these were not sufficiently supported to give practical effect to the subject of the motions. A Company was accordingly formed in 1928, with a capital of £13,000; an existing building was acquired and adapted, and the Crematorium began to function soon thereafter.

The position in Glasgow is similar in general outline, but, very recently, the Town Council have taken up the consideration of the facilities for cremation in the city. The reporting Committee of the Council have not yet made any recommendation on the matter.

6.—Position in Aberdeen.

So far as I can ascertain, there has been no nuisance arising from the presence and condition of cemeteries in Aberdeen. The disposal of the dead by burial has been carried out on satisfactory lines, and the cemeteries have, in the main, been managed and kept in a very satisfactory manner. There has been no evidence of pollution of the water or contamination of the air. There have been no circumstances in Aberdeen which make it essential to accelerate a transition from ordinary burial to cremation.

7.—Conclusions.

The disposal of the dead by cremation has the fullest hygienic sanction, and, for that reason alone, I would recommend that the Town Council should not withhold the weight of their influence as Local Authority to the establishment of a crematorium to serve the City and North-East of Scotland. It is a matter of policy for the Council to decide whether the conditions and the state of public opinion on the matter in the City are such as to warrant them to establish a Municipal Crematorium. The need in Edinburgh and Glasgow has, up to the present, been adequately met by private enterprise, and it is for the Council to decide whether, having in view all the circumstances, they should (1) leave such requirement as there may be to this agency, or (2) encourage the establishment of such agency in the City by such means as they may determine, or (3) take positive action in the matter by establishing a Municipal Crematorium.

HARRY J. RAE,
Medical Officer of Health.

The Public Health Committee resolved to recommend that the Council, as Local Authority, should view favourably the establishment of a Crematorium in or near the City by such means as may be determined and when occasion arises, but that the question of the establishment of a Municipal Crematorium should be, in the meantime, deferred.

CHAPTER V.

SPECIAL HEALTH SERVICES.

MUNICIPAL HOSPITAL SERVICES.

1. Woodend Hospital.

The diseases treated at Woodend Hospital, together with the beds available under each group, are as follows:—

(1) *Infectious Diseases*—

Tuberculosis	...	...	...	...	148
Pneumonia	...	...	...	...	30
Rheumatism	...	...	...	...	6
Total					184 beds.

(2) *Cases coming within the purview of the Maternity Service and Child Welfare Scheme*

Scheme	16 beds.
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(3) *General Diseases*—

Medical	74
Surgical	50
Total					124 beds.
Total					324 beds.

The number of beds allocated as between medical and surgical cases in the above-named category is fluctuating, because, in senile cases, there is interchangeability in medical and surgical beds. The actual number of beds available for *acute* cases is 50 for surgical and 50 for medical cases.

Table XI. gives the number of admissions and discharges during the year 1930.

TABLE XI.—ABERDEEN.—WOODEND HOSPITAL. Year, 1930

	In Hospital on December 31, 1929.	Admitted during the Year.	Discharged during the Year.	Died in Hospital.	In Hospital on December 31, 1930.
<i>A.—General Hospital.—</i>					
Surgical Cases ...	61	538	403	114	82
Medical Cases ...	105	808	686	124	103
Gynaecological Cases ...	7	170	166	6	5
Total ...	173	1,516	1,255	244	190
<i>B.—Special Hospital.—</i>					
Tuberculosis					
(a) Respiratory ...	62	169	129	26	76
(b) Other ...	58	122	127	13	40
Rickets and Orthopaedic ...	5	22	26	1	—
Total ...	125	313	282	40	116
Total A. and B. ...	298	1,829	1,537	284	306

The admissions during the year 1930 are hereunder compared with those of the two previous years.

	1930.	1929.	1928.
General Hospital ...	1,516	1,624	1,276
Special Hospital ...	313	289	281
Total ...	1,829	1,913	1,557

During 1930, the daily number of patients under treatment in the General Hospital varied from 128 to 202, the average daily number being 166. In the Special Hospital, the daily number of patients varied from 117 to 149, the average daily number being 138. In 1929, the average daily number of patients was 174 in the General Hospital and 114 in the Special Hospital.

In 1930, the total number of Parish cases admitted was 694, with 165 deaths, as compared with 648 admissions and 177 deaths in 1929. With regard to cases from the County of Aberdeen and other Counties, in 1930, there were 68 ordinary admissions, with 11 deaths, whereas from the same areas, 143 cases of tuberculosis were admitted, and of these 25 died. The corresponding figures for 1929 were 73 ordinary admissions, with 4 deaths, and 101 cases of tuberculosis, with 16 deaths.

The operations performed during the year numbered 719—484 major and 235 minor. The major operations are briefly subdivided into:—

Gynaecological ...	95
Abdominal ...	131
Chest ...	22
Bones and Joints ...	97
Ear, nose, and throat ...	49
Miscellaneous ...	90

In June, 1929, arrangements were come to with the Directors of the Aberdeen Royal Infirmary whereby the surgical waiting list of that institution would be decreased by the admission of surgical cases to Woodend Hospital whenever beds were available in the latter institution. During 1930, under this arrangement, 98 general surgical cases and 17 tuberculosis cases were dealt with. These cases were investigated and treated in Woodend Hospital by the surgeons of the Royal Infirmary who had seen them in the first instance. These cases comprised a high percentage of the abdominal cases as well as a very fair percentage of the gynaeceological cases. The chest cases mentioned above were mostly cases of pneumonia with complications, or were cases of pulmonary tuberculosis requiring surgical treatment.

Pneumonia.—During 1930, the number of cases of pneumonia admitted were 354, as compared with 420 in 1929.

In the following Table are given the number of admissions of the two main types of pneumonia, the number of deaths, and the death-rate associated with each type.

			Lobar.	Broncho.	Total.
Admissions	...	...	229	125	354
Deaths	...	...	36	25	61
Death-rate	...	...	15.7%	20%	17.2%

An investigation was carried out in connection with the serum treatment of cases of lobar pneumonia, and details are given in Chapter I. of this Report.

With regard to the 125 cases of broncho-pneumonia, the sufferers were mostly elderly people, fully 60 per cent. of the patients being over 50 years of age. The high death-rate, namely, 60 per cent., is explained by the fact that the majority of these cases were in a debilitated general condition.

Empyema.—Seven cases of pneumonia developed empyema, 3 were pneumococcal in origin, 3 were streptococcal and 1 was a mixed infection. One of the cases, a young woman, developed pulmonary tuberculosis while convalescing from empyema and shortly afterwards developed tuberculous meningitis from which she died. No other deaths occurred from this cause.

Tuberculosis.—During the year, 291 cases were admitted to hospital, consisting of 169 cases of respiratory tuberculosis and 122 cases of other forms of tuberculosis. There were 26 deaths from respiratory tuberculosis and 13 deaths from other forms of tuberculosis. Of the 169 respiratory cases, 83 were males and 86 females, and of the other cases, 57 were males and 65 females.

Artificial pneumothorax was induced in 15 cases of tuberculosis, and a series of 5 were treated with sanocrysin.

The cases of non-respiratory tuberculosis consisted of 35 cases of bones and joints, 11 cases of abdominal tuberculosis, 43 of tuberculous glands, 27 cases of tuberculosis of spine, and 6 cases of tuberculosis of kidney.

The cases of respiratory tuberculosis discharged from Woodend Hospital during the year numbered 76. As to the condition on discharge, 88 per cent. had improved in general health, 87 per cent. showed an increase in weight, 24 per cent. showed an improvement in the lung condition, some 54 per cent. were considered by the Tuberculosis Officer as fit for work or school, and in 62 per cent. of the cases the pulmonary condition was stationary.

With regard to the presence of tubercle bacilli in the sputum of cases admitted, 65 per cent. were positive, and 28 per cent. had bacilli in the sputum on discharge.

Maternity and Child Welfare Services.—These are fully referred to in the section of this Report dealing with Maternity and Child Welfare (pp. 83 and 86).

The following are the numbers treated in Woodend Hospital under the above-named Scheme:—

A. Diseases of Children (a) Rickets	...	...	...	...	22
(b) Other Diseases	...	...	...	...	33
B. Cases from the Ante-natal Clinic at the City Hospital and Burnside Home	...	...	...	...	59
C. Cases admitted direct from the Maternity Hospital	...	...	...	...	5
D. Cases that could not be dealt with at the Maternity Hospital	...	...	...	...	38
E. Abortions	...	...	...	...	21
					<hr/>
					178
					<hr/>

X-Ray Department.—A total of 1,339 cases attended the X-ray Department, 2,348 plates being taken.

2. City Hospital.—

The total number of beds available in the City Hospital is 285. A sixty-bed ward, which has lately been completed, will be a mobile ward, and may be used for diphtheria, scarlet fever, puerperal fever and pyrexia, or tuberculosis. For example, in the beginning of 1929, there was a severe outbreak of diphtheria, which necessitated the conversion of one of the scarlet fever wards into a diphtheria ward, and in September, 1930, an epidemic of measles occurred, and a ward usually occupied by tuberculous patients, had to be set aside for cases of measles, accompanied with broncho-pneumonia and other complications,

The present allocation of the beds in the City Hospital is as follows:—

Diphtheria	...	...	...	...	...	93	beds.
Scarlet Fever	...	...	...	...	...	60	„
Siling Babies Department	...	...	...	...	...	22	„
Tuberculosis—Male	...	...	...	...	...	26	„
do. —Female	...	...	...	...	...	50	„
Puerperal Fever	...	...	...	...	...	16	„
Erysipelas	...	...	...	...	...	6	„
Miscellaneous Diseases (including Venereal Disease)	...	...	...	...	...	12	„
Total	...	...	...	...	...	285	„

The admissions to the City Hospital during 1930 are shown in Table XII. The total admissions amounted to 1,661 (including 111 cases admitted from outside the City), as compared with an average of 1,671 during the 1920-1929 decennium. The admissions from outside the City included 29 cases of puerperal fever and pyrexia, with 4 deaths; 16 marasmic babies (including 1 suffering from ophthalmia neonatorum), with 3 deaths; 9 cases of tuberculosis, with 5 deaths; 17 cases of scarlet fever; 12 cases of diphtheria, with 1 death; 6 cases of dysentery; 6 cases of erysipelas; 5 cases of typhoid and paratyphoid fever; 2 cases of poliomyelitis; and 9 miscellaneous cases, with 2 deaths.

The deaths during 1930 (including 15 among cases admitted from outside the City) numbered 116, as compared with an annual average of 172 during the preceding ten years.

The daily number of patients under treatment varied from 132 to 242; the average daily number being 200.

The operations performed at the City Hospital during the year numbered 98—79 major operations and 19 minor operations.

Smallpox.—In 1930, no cases were admitted to the City Hospital. By arrangement, 9 City cases were admitted to an Infectious Diseases Hospital belonging to the County of Aberdeen. Details of these cases are given in Chapter III. of this Report.

Chicken-pox.—Seven cases were treated in hospital. No deaths.

Scarlet Fever.—The number of cases of scarlet fever admitted was 332, as compared with an annual average of 454 during the preceding decennium. There were 2 deaths, giving a case-mortality of 0.6 per cent., as against an average of 1.2 per cent. during the 1920-1929 decennium.

Diphtheria.—Of this disease, 509 cases were admitted during the year, as compared with an annual average of 390 during the preceding decennium. The deaths numbered 14, the case-mortality being 2.7 per cent., as against an average of 4.8 for the 1920-1929 decennium.

TABLE XII.—ABERDEEN—CITY HOSPITAL—ANNUAL SUMMARY.

† ADMISSIONS AND DEATHS DURING EACH YEAR FROM 1920 TO 1930 INCLUSIVE.

DISEASE.		1930	1929	1928	1927	1926	1925	1924	1923	1922	1921	1920	1920-1929 Annual Average
Small-Pox,	{ Admitted, ...	0	1	0	0	0	1	1	1	0	0	0	0·4
	{ Died, ...	0	0	0	0	0	0	0	0	0	0	0	0·0
Scarlet Fever, ...	{ Admitted, ...	332	339	563	617	789	625	186	238	272	538	375	454·2
	{ Died, ...	2	1	4	4	8	12	4	4	6	6	7	5·6
Diphtheria,	{ Admitted, ...	509	411	454	308	326	427	282	185	287	684	536	390·0
	{ Died, ...	14	20	14	15	21	21	11	8	14	35	28	18·7
Typhus Fever, ...	{ Admitted, ...	0	0	0	0	0	0	0	0	0	0	0	0
	{ Died, ...	0	0	0	0	0	0	0	0	0	0	0	0
Typhoid and Para- typhoid Fever, ...	{ Admitted, ...	13	11	13	7	2	42	10	23	9	6	7	13·0
	{ Died, ...	0	0	1	0	0	0	1	3	0	0	2	0·7
Acute Polio- myelitis,	{ Admitted, ...	3	6	11	3	2	5	3	0	7	4	3	4·4
	{ Died, ...	1	1	0	0	0	0	0	0	0	2	0	0·3
Cerebro Spinal Meningitis	{ Admitted, ...	3	5	3	3	2	1	4	6	3	5	5	3·7
	{ Died, ...	4	3	2	3	2	0	3	3	2	3	1	2·2
Acute Pneu- monias,	{ Admitted, ...	19	50	25	248	144	118	69	24	52	24	44	79·8
	{ Died, ...	4	13	11	28	16	11	9	3	14	10	9	12·4
Erysipelas,	{ Admitted, ...	61	62	60	31	37	27	15	22	32	37	40	36·3
	{ Died, ...	3	8	7	1	4	2	3	0	4	3	4	3·6
Puerperal Fever and Pyrexia,	{ Admitted, ...	104	79	64	46	38	20	11	8	4	7	9	...
	{ Died, ...	10	11	13	7	8	7	3	3	1	2	3	...
Measles, ...	{ Admitted, ...	111	7	70	13	74	86	96	49	209	1	52	65·7
	{ Died, ...	7	0	9	0	8	9	11	11	39	0	5	9·3
Whooping Cough,	{ Admitted, ...	21	58	33	20	20	48	91	0	32	5	6	29·3
	{ Died, ...	0	5	10	2	5	18	18	0	10	0	2	7·0
Tuberculosis	{ Admitted, ...	131	140	196	207	204	220	260	275	313	320	287	242·2
	{ Died, ...	27	23	40	51	36	52	47	47	50	42	47	43·5
Siling Infant Wards	{ Admitted, ...	162	163	190	158	170	160	161	167	192	178	143	168·2
	{ Died, ...	32	30	30	25	24	51	44	50	70	75	76	47·5
Other Cases,	{ Admitted, ...	192	229	258	201	131	102	104	130	140	118	135	154·8
	{ Died, ...	12	20	30	15	13	11	17	12	13	13	12	15·6
Total Cases,	{ Admitted, ...	1661	1541	1940	1862	1939	1882	1293	1128	1552	1927	1642	1670·6
	{ Died, ...	116	135	171	151	145	194	171	144	223	191	197	172·2
Average Daily Number of Patients in Hospital, ...		200	192	204	248	260	255	189	180	198	264	255	225

† Including cases admitted from outside City.

Measles.—The admissions during the year numbered 111, with 7 deaths, giving a case-mortality of 6.3 per cent. This disease assumed epidemic prevalence in the last quarter of the year. In the previous year there were 7 admissions, with no deaths.

Whooping Cough.—The admissions during the year numbered 21, none of which proved fatal. During the 1920-1929 decennium, the average annual number of cases admitted was 29, with 7 deaths, and a case-mortality of 24.1 per cent.

Acute Pneumonias.—During the year, 19 cases of acute primary and influenzal pneumonia were admitted for treatment, in addition to 354 cases admitted to Woodend Hospital. Of these 19 cases, 4 proved fatal.

Tuberculosis.—During the year, 131 cases were admitted. There were 27 deaths.

Of the 131 cases admitted, all were cases of respiratory tuberculosis except 46. These cases of non-respiratory tuberculosis consisted of 3 cases of tuberculosis of bones and joints, 4 cases of tuberculous meningitis, 7 cases of abdominal tuberculosis, 30 cases of tuberculous glands, and 2 cases of tuberculosis of spine.

Of the 85 respiratory cases, 38 were males and 47 females, and of the other cases 14 were males and 32 females.

The cases of respiratory tuberculosis discharged from the City Hospital during the year numbered 73. As to the condition on discharge, 88 per cent. had improved in general health, 86 per cent. showed an increase in weight, 13 per cent. showed an improvement in the lung condition, some 45 per cent. were considered by the Tuberculosis Officer as fit for work or school, and in 37 per cent. of the cases the pulmonary condition was stationary.

As to the presence of tubercle bacilli in the sputum of cases discharged, 26 per cent. had bacilli in the sputum.

Meningococcic Meningitis.—There were 3 admissions, and 4 deaths, as compared with an annual average of 4 cases and 2 deaths in the preceding ten years.

Acute Poliomyelitis.—Three cases were admitted during the year, one of which proved fatal, the immediate cause of death being bulbar paralysis.

Dysentery.—Thirty-three cases were admitted during the year. There were 2 deaths.

Typhoid and Paratyphoid Fever.—In 1930, 13 cases were admitted. There were no deaths. In the preceding decennium, the average annual number of cases admitted was 13, and the deaths, 1.

Erysipelas.—Of this disease, 61 cases were admitted to hospital, with 3 deaths, the average annual number of cases admitted during the 1920-1929 decennium being 36, with 4 deaths.

Puerperal Fever and Pyrexia.—In 1930, 104 cases were admitted, including 29 cases admitted from outside the City. The deaths numbered 10, of which 8 were due to puerperal sepsis. Of the 10 deaths, 4 were among cases admitted from outside the City.

Venereal Diseases.—During the year, 11 cases of syphilis, 14 cases of gonorrhoea, and 2 cases of mixed infections were admitted for treatment.

Ophthalmia Neonatorum.—Nine cases were admitted, and in each case a complete cure was obtained.

X-Ray Department.—A total of 1,128 cases attended the X-ray Department, 1,297 plates being taken.

Cleansing Block and Skin Department.—Table XIII. shows that during the year the number of verminous persons, whether members of families with children of school age or not, disinfested at the City Hospital Cleansing Department was 226, as compared with an annual average of 318 in the 1925-1929 quinquennium. This table also shows that a total of 292 persons was treated for scabies in the skin wards of the Cleansing Department, as compared with an annual average of 192 in the preceding five years.

TABLE XIII.—ABERDEEN.—CLEANSING STATION.—1930.

	AGE GROUPS (years)				ALL AGES, 1930.	AVER. 1925-29.
	0-5	5-15	15-25	25 +		
Verminous Persons Cleansed. .	31	84	19	92	226	318
Scabies Cases Treated, . . .	32	125	51	84	292	192
TOTALS,	63	209	70	176	518	510

3. Kingseat Mental Hospital.—

Statistics relating to Kingseat Mental Hospital are dealt with in the section of this Report relating to Mental Health Services.

TUBERCULOSIS SERVICES.

Mortality.—During 1930, there were 85 deaths from respiratory tuberculosis, as against 91 in 1929, and 34 deaths from other forms of tuberculosis, as against 43 in the previous year.

Table XIV., as also the accompanying chart, shows the great fall in the Tuberculosis death-rate during the past seventy years.

ABERDEEN—TUBERCULOSIS, 1856-1930 —QUINQUENNIAL PERIODS.

ALL AGES. BOTH SEXES.

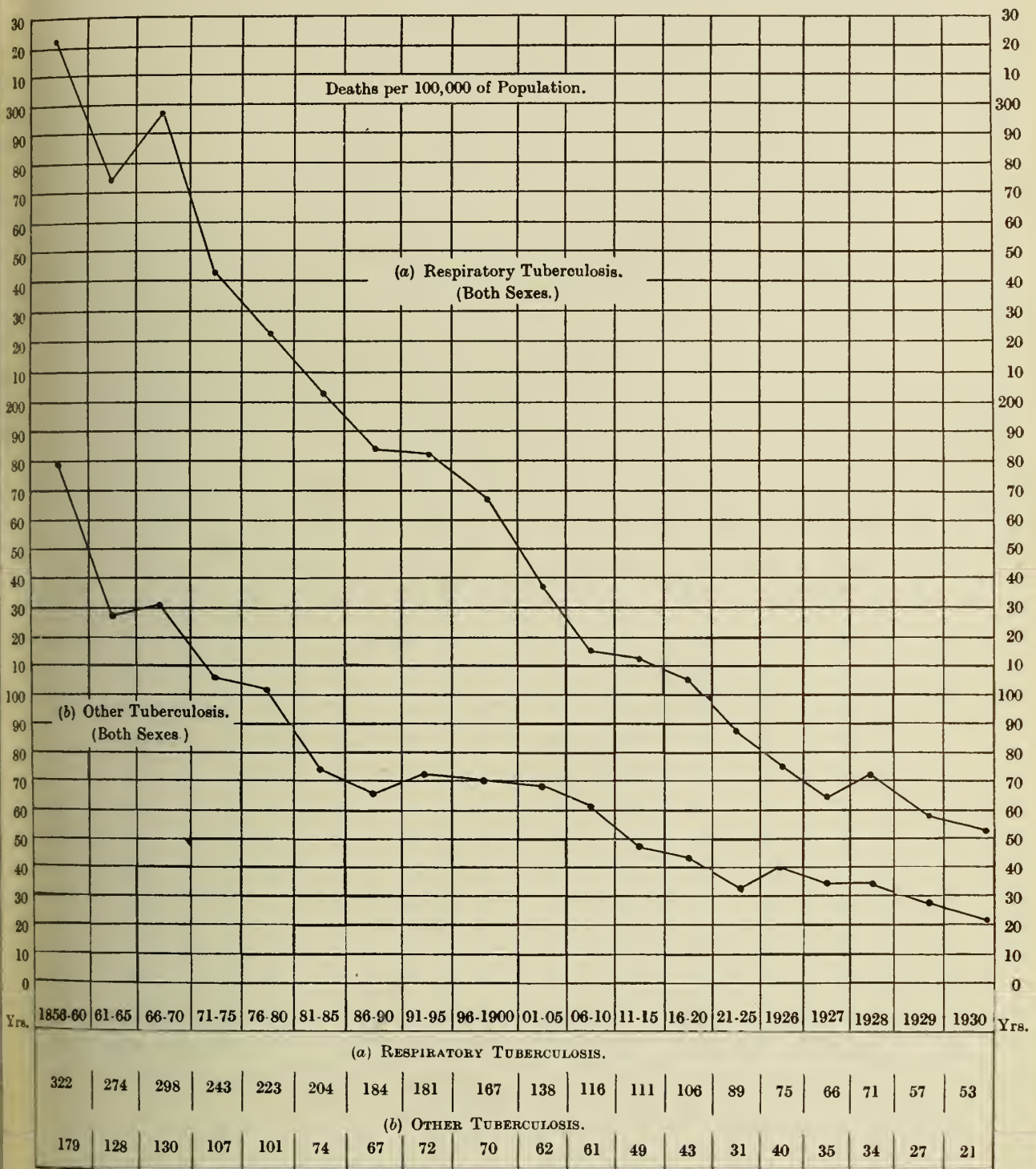


TABLE XIV.—ABERDEEN.—MORTALITY FROM TUBERCULOSIS IN YEARS 1856-1930 *
Per 100,000 of Population.

PERIOD.	RESPIRATORY TUBERCULOSIS.			OTHER TUBERCULOUS DISEASES.			ALL TUBERCULOUS DISEASES.		
	Males.	Females.	Both Sexes.	Males.	Females.	Both Sexes.	Males.	Females.	Both Sexes.
1856-60 .	333	312	322	235	135	179	568	447	501
1861-65 .	267	279	274	158	103	128	425	382	402
1866-70 .	295	300	298	170	98	130	465	398	428
1871-75 .	234	250	243	129	89	107	363	339	350
1876-80 .	217	228	223	112	92	101	329	320	324
1881-85 .	189	216	204	90	62	74	279	278	278
1886-90 .	179	188	184	76	60	67	255	248	251
1891-95 .	179	183	181	83	62	72	262	245	253
1896-1900 .	166	168	167	77	64	70	243	232	237
1901-05 .	143	134	138	79	62	69	222	196	207
1906-10 .	119	113	116	74	51	61	193	164	178
1911-15 .	125	99	111	53	47	49	177	146	160
1916-20 .	104	107	106	49	39	43	153	146	149
1921-25 .	99	81	89	37	27	31	136	108	120
1921 . .	81	95	88	18	16	17	98	111	105
1922 . .	103	77	89	31	21	26	135	98	115
1923 . .	107	58	80	53	33	43	160	91	123
1924 . .	100	83	91	55	35	44	155	118	135
1925 . .	104	92	97	26	28	27	130	120	124
1926 . .	84	67	75	39	41	40	123	108	115
1927 . .	70	63	66	41	29	35	111	92	101
1928 . .	76	66	71	44	27	34	120	92	105
1929 . .	63	52	57	30	24	27	93	76	84
1930 . .	62	46	53	24	19	21	87	65	75

* Corrected for transferred deaths in 1904 and subsequent years.

Notifications.—Table XV. (A) gives the number of tuberculosis cases notified during the year, divided into respiratory and non-respiratory cases, and arranged according to sex and age-period. During 1930, 128 cases of respiratory tuberculosis and 71 cases of non-respiratory tuberculosis were notified.

TABLE XV.—ABERDEEN.—(A.) TUBERCULOSIS CASES NOTIFIED IN 1930

		NUMBER OF CASES NOTIFIED AS SUFFERING FROM TUBERCULOSIS.								Number of cases notified during year in which diagnosis of Tuberculosis has been confirmed by M.O.H. (or T.O.)	
		Under 5	5 and under 10	10 and under 15	15 and under 25	25 and under 35	35 and under 45	45 and under 65	65 and upwards		TOTAL
Respiratory	{ Males	2	1	2	12	16	12	16	1	62	57
	{ Females	2	6	3	16	17	12	9	1	66	55
Non-Respiratory	{ Males	11	3	8	4	2	1	3	2	37	30
	{ Females	9	6	5	7	4	1	1	1	34	23

(B.) NUMBER OF PERSONS BELONGING TO ABERDEEN AT 31ST DECEMBER, 1930, WHO WERE KNOWN TO BE SUFFERING FROM TUBERCULOSIS.

		NUMBER OF KNOWN CASES								
		Under 5	5 and under 10	10 and under 15	15 and under 25	25 and under 35	35 and under 45	45 and under 65	65 and up- wards	Total
RESPIRATORY.										
1. Tubercle Bacilli found	{ Males	...	1	6	23	39	35	43	2	154
	{ Females	...	4	3	31	38	28	12	3	119
2. Tubercle Bacilli not found	{ Males	...	6	10	12	15	8	9	1	61
	{ Females	...	5	7	14	10	7	9	2	54
Respiratory Total		...	16	26	80	102	78	78	8	388
NON-RESPIRATORY.										
1. Abdominal	{ Males	...	...	4	...	...	...	...	...	4
	{ Females	2	1	2	3	3	1	...	...	12
2. Spine	{ Males	...	5	5	1	1	...	1	...	13
	{ Females	1	2	2	5	2	...	1	...	13
3. Bones and Joints (exclusive of Spine)	{ Males	4	7	5	8	2	1	...	...	27
	{ Females	2	4	2	5	3	2	...	1	19
4. Superficial Glands	{ Males	11	9	9	1	...	1	1	...	32
	{ Females	1	7	4	7	5	2	1	...	27
5. Lupus	{ Males	...	1	1	3	3	1	...	1	10
	{ Females	...	1	...	2	4	2	3	5	17
6. Other Parts or Organs	{ Males	...	...	2	1	4	4	2	...	13
	{ Females	...	...	...	1	...	...	2	...	3
Non-Respiratory Total		21	37	36	37	27	14	11	7	190
Respiratory and Non- Respiratory Total		21	53	62	117	129	92	89	15	578

As regards the **Site of the Disease** in the 71 cases notified as suffering from tuberculosis other than respiratory, 9 were suffering from abdominal tuberculosis, 13 from tuberculous meningitis, 20 from tubercle of bones and joints (including the spine), 18 from tuberculous glands (mainly cervical), and 11 from generalised and other tuberculosis (including 2 of lupus).

There were 6 deaths of abdominal cases, 15 of meningitis cases, 4 of cases of bones and joints, and 9 of other cases.

As regards the number of cases notified during the year in which diagnosis of tuberculosis was confirmed by the Tuberculosis Medical Officer, Table XV. (A) shows that the diagnosis was confirmed in 112 respiratory cases and 53 non-respiratory cases, or a total of 165 cases.

Table XV. (B) shows the number of persons belonging to Aberdeen at 31st December, 1930, who were known to be suffering from tuberculosis. The numbers are—388 respiratory cases and 190 non-respiratory cases, or a total of 576 persons.

(C.) NUMBER OF CASES WHICH RECEIVED TREATMENT UNDER THE TUBERCULOSIS SCHEME IN SANATORIA OR OTHER INSTITUTIONS DURING THE YEAR ENDED 31ST DECEMBER, 1930.

		NUMBER OF PATIENTS				
		In Institutions on January 1	Admitted during the year	Discharged during the year	Died in the Institutions	In Institutions on December 31
RESPIRATORY.						
*Adults	<div> <div>Males</div> <div>Females</div> </div>	86	91	57	13	103
		93	77	70	8	88
Children	<div> <div>Males</div> <div>Females</div> </div>	12	17	13	...	16
		27	17	14	...	29
NON-RESPIRATORY.						
*Adults	<div> <div>Males</div> <div>Females</div> </div>	20	9	11	2	12
		21	15	20	1	14
Children	<div> <div>Males</div> <div>Females</div> </div>	17	35	29	2	15
		15	45	48	...	3
Total		291	306	262	26	280

* All patients of 15 years and upwards are classed as Adults.

Institutional Treatment.—Table XV. (C) gives the number of notified and un-notified cases which received treatment under the Tuberculosis Scheme in sanatoria or other institutions during 1930. Of the 306 cases admitted, 202 were cases of respiratory tuberculosis and 104 were cases of non-respiratory tuberculosis. The number of notified cases admitted to each institution is given on following page.

TUBERCULOSIS CASES NOTIFIED AND RECEIVING INDOOR INSTITUTIONAL
TREATMENT.

				1930.		
				Resp.	Other	
				Tuberc.	Tuberc.	Total.
City Hospital—Wards and Shelters	...	...	...	75	21	96
Woodend Hospital—Wards and Shelters	...	...	...	90	44	134
Royal Infirmary	...	...	...	6	1	7
Tor-na-Dee Sanatorium	...	...	...	3	0	4
Kingseat Mental Hospital	...	...	...	4	0	4
Royal Hospital for Sick Children	...	...	...	0	4	4
Linnmoor Home (for Children)	...	...	...	1	8	9
Total admissions				179	78	257
Deduct cases treated in two institutions				9	3	12
				170	75	245

The average stay of the tuberculosis cases discharged during the year from the hospitals and sanatoria giving indoor institutional treatment was, in respect of respiratory cases, 168 days for the City Hospital, 188 for Woodend Hospital, 21 for the Royal Infirmary, and 25 for Linn Moor Home. As regards the cases of other forms of tuberculosis, the average stay was 138 days for the City Hospital, 155 for Woodend Hospital, 21 for the Royal Infirmary, 10 for the Sick Children's Hospital, and 28 for Linn Moor Home.

As to outdoor institutional treatment, 484 cases, all of which were of respiratory tuberculosis except 133, received treatment at the Tuberculosis Institute at the City Hospital. The total number of attendances during the year was 4,434.

Insured Persons (National Health Insurance Act).—Of the 128 cases of respiratory tuberculosis notified, 62 were insured persons, 38 being male and 24 being female. The notified cases of other forms of tuberculosis included 17 insured persons, 9 of whom were males and 8 females.

As stated in previous Reports, the Town Council have now assumed full financial responsibility for the treatment of insured tuberculous patients. During the year, the number of prescriptions passed for payment amounted to 1,680.

Food Supply.—During 1930, food, chiefly milk, was supplied to an average daily total of 21 patients receiving dispensary or domiciliary treatment.

Supervision of Cases.—The Tuberculosis Medical Officer had the assistance of three Tuberculosis Health Visitors or Nurses in the visitation and supervision of tuberculosis cases throughout the year. The number of visits made by the Tuberculosis Health Visitors during the year under review was 8,095.

Size of House and Density of Occupancy.—Table XVI. gives the number of cases occurring in houses of different sizes, along with the average number of inmates. In the case of respiratory tuberculosis, the average number of inmates, including the patient, varied from 3.5 in one-roomed houses to 5.0 in four-roomed houses, and 5.8 in houses of five rooms and upwards. The average for houses of all sizes taken together was 5.1.

In the cases of other forms of tuberculosis, the average ran from 2.9 for one-roomed houses to 5.3 for four-roomed houses, and 7.0 for houses of five rooms and upwards. The average for all houses was 5.6.

TABLE XVI.—ABERDEEN.—TUBERCULOSIS—SIZE OF HOUSE IN RELATION TO NOTIFIED CASES AND REGISTERED DEATHS DURING 1930.

		1 Room	2 Rooms	3 Rooms	4 Rooms	5 Rooms and up	Institu- tional or not stated	Totals for 1930	CORRESPONDING TOTALS FOR	
									1929	1928
Respiratory Tuber- culosis (Cases),	Male, .	4	12	21	8	2	15	62	57	75
	Female, .	4	17	30	5	2	8	66	69	75
Both Sexes, {	Cases, .	8	29	51	13	4	23	128	126	150
	Deaths, .	1	28	26	13	8	9	85	91	113
Average Number of Inmates, including Patient, .		3.5	4.3	5.5	5.0	5.8	...	5.1	5.3	5.0
Other Tuberculosis (Cases),	Male, .	3	18	10	3	2	1	37	41	62
	Female, .	3	14	8	4	2	3	34	41	67
Both Sexes, {	Cases, .	6	32	18	7	4	4	71	82	129
	Deaths, .	4	16	6	2	3	3	34	43	55
Average Number of Inmates, including Patient, .		2.9	5.8	6.4	5.3	7.0	...	5.6	5.8	5.3
*Houses in City at Census, 1921 Average Number of Inmates, }		2.2	3.9	4.7	4.7	4.8	...	4.2	...	...

* Houses of 25 rooms and over are excluded.

As regards the position of the tuberculous cases in relation to room and bed accommodation at the time of notification, it was found that of the 128 cases of respiratory tuberculosis, only 49, or 38 per cent., were occupying a separate bed in a separate room, and 23, or 18 per cent., had a separate bed but not a separate room. About one-half had neither a separate bed nor a separate room.

Assistance in Payment of Rent.—In December, 1916, the Town Council voted £100 out of the Common Good for the purpose of assisting necessitous

tuberculous patients to secure improved housing accommodation while suffering from tuberculosis. During 1930, one tuberculous patient received such assistance.

Loan of Beds.—In order to facilitate the separation of the patient from the other members of the household, 20 beds or cots, with the necessary bedding, were given on loan to needful patients. On the last day of the year, there were on loan 69 beds with bedding. In addition, at the end of 1930, there were 3 sets of bedding on loan. The loaned beds and bedding continue to be well cared for, and are nearly always returned in good and clean condition, subject to the unavoidable effects of ordinary use.

VENEREAL DISEASES SERVICES.

Attendances for Treatment.

During the year, a total of 771 new City cases attended for treatment at the Treatment Centres which are situated at the Aberdeen Royal Infirmary and the Aberdeen City Hospital. Of these, 428 attended the Infirmary Centre and 343 attended the City Hospital Centre. The average annual number of new City cases attending in the 1925-1929 quinquennium was 658. The total number of attendances of all City cases at both Centres during the year was 45,686, as compared with an annual average of 33,798 in the preceding quinquennium. With regard to in-patients, in all, 51 City cases were admitted in 1930, 22 being admitted to the Royal Infirmary and 29 to the City Hospital.

Ophthalmia Neonatorum.

A total of 67 cases was reported during 1930. The average annual number during the preceding ten years was also 67.

Venereal Disease Statistics.

The statistical data (see pp. 69-70) of the incidence and treatment of venereal diseases, as measured under the Joint Scheme are submitted for the year under review. The statistical data relating to work done in connection with venereal diseases at the City Hospital Centre are also submitted.

TOTAL NUMBER OF NEW CASES

YEAR	WHOLE JOINT SCHEME												ABERDEEN CITY CASES ONLY											
	TOTAL			Syphilis		Gonorrhoea		Soft Ch.	Mixed Infs.		Not V.D.		TOTAL			Syphilis		Gonorrhoea		Soft Ch.	Mixed Infs.		Not V.D.	
	M	F		M	F	M	F		M	F	M	F	M	F		M	F	M	F	M	F	M	F	
1930	643	92	58	329	33	8	1	7	2	76	37	498	54	38	221	19	7	1	6	1	59	22		
1929	717	115	77	346	39	7	0	4	0	76	53	498	76	48	254	24	6	0	3	0	52	35		
1928	680	96	73	312	55	8	0	9	1	82	44	483	66	49	221	41	2	0	6	1	65	32		
1927	706	125	69	313	46	8	0	3	2	83	57	498	73	49	237	36	3	0	1	1	55	43		
1926	591	97	79	258	32	4	0	5	1	71	44	408	57	52	192	23	1	0	2	1	48	32		
1925	632	85	61	299	52	3	0	5	2	83	42	434	44	35	237	38	3	0	1	2	48	26		
Average— 1925-1929 (5 years)	665	104	72	305	45	6	0	5	1	79	48	464	63	47	228	32	3	0	3	1	53	34		

IN-PATIENT CASES

YEAR	WHOLE JOINT SCHEME												ABERDEEN CITY CASES ONLY													
	TOTAL			Syphilis		Gonorrhoea		Soft Ch.		Mixed Infs.		Not V.D.		TOTAL			Syphilis		Gonorrhoea		Soft Ch.		Mixed Infs.		Not V.D.	
	M	F		M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	
	1930	74	16	14	29	14	0	0	1	0	0	0	22	3	5	9	4	0	0	1	0	0	0	0	0	0
1929	109	29	19	27	13	1	0	2	4	3	2	46	10	6	15	6	1	0	1	4	1	2				
1928	94	21	18	27	20	0	0	2	4	0	2	46	11	9	8	13	0	0	1	4	0	0				
1927	106	25	18	34	18	2	0	2	4	3	0	60	11	10	23	11	0	0	1	3	1	0				
1926	78	14	15	26	14	0	0	1	6	2	0	35	3	7	13	8	0	0	0	4	0	0				
1925	84	17	13	29	15	0	0	2	7	1	0	42	6	4	17	10	0	0	0	5	0	0				
Average— 1925-1929 (5 years)	93	21	17	29	16	0.6	0	2	5	2	1	46	8	7	15	10	0.2	0	1	4	0.4					

ATTENDANCES OF ALL CASES

YEAR	WHOLE JOINT SCHEME												ABERDEEN CITY CASES ONLY											
	TOTAL			Syphilis		Gonorrhoea		Soft Ch.	Mixed Infs.		Not V.D.		TOTAL			Syphilis		Gonorrhoea		Soft Ch.	Mixed Infs.		Not V.D.	
	M	F		M	F	M	F		M	F	M	F	M	F		M	F	M	F	M	F	M	F	
1930	33,167	5,087	4,984	18,680	2,790	8	0	807	637	113	61	27,979	3,667	3,706	16,722	2,494	8	0	713	490	99	60		
1929	31,574	5,412	4,567	15,579	4,351	11	0	923	581	86	64	27,308	4,076	3,383	14,328	4,070	7	0	809	512	71	52		
1928	30,075	4,705	4,589	14,225	4,726	17	0	1,053	611	64	75	25,854	3,401	3,467	12,895	4,443	6	0	976	560	48	58		
1927	31,086	5,351	5,171	14,452	3,654	29	0	1,542	693	118	76	26,544	3,907	3,924	13,038	3,506	14	0	1,375	632	81	67		
1926	27,251	3,712	4,296	12,766	3,412	7	0	1,721	1,171	83	83	24,049	2,988	3,541	11,448	3,282	2	0	1,543	1,119	55	71		
1925	29,744	3,432	3,773	14,867	4,171	16	0	2,072	1,167	140	106	25,919	2,709	3,112	13,135	3,962	16	0	1,815	1,000	83	87		
Average— 1925-1929 (5 years)	29,946	4,522	4,481	14,378	4,063	16	0	1,462	845	98	81	25,935	3,416	3,485	12,969	3,853	9	0	1,303	765	68	67		

LABORATORY EXAMINATIONS.

(a) Total Number.

YEAR.	WHOLE JOINT SCHEME.							ABERDEEN CITY CASES ONLY.						
	TOTAL	Syphilis.				Gonorrhoea.		TOTAL.	Syphilis.				Gonorrhoea.	
		Wassermann.		Spirochete.		Gonococcus.			Wassermann.		Spirochete.		Gonococcus.	
		Pos.	Neg.	Pos.	Neg.	Pos.	Neg.		Pos.	Neg.	Pos.	Neg.	Pos.	Neg.
1930	9,736	1,695	5,188	21	55	501	2,276	7,568	1,206	4,429	13	45	342	1,533
1929	9,148	1,680	4,761	25	49	488	2,145	7,373	1,214	4,059	21	45	375	1,659
1928	8,983	1,720	4,424	26	76	451	2,286	7,103	1,262	3,698	21	65	364	1,693
1927	9,161	1,883	4,550	20	54	416	2,238	7,295	1,378	3,805	15	49	323	1,725
1926	9,708	1,848	4,534	11	69	380	2,866	7,973	1,444	3,834	10	67	315	2,303
1925	7,811	1,470	3,564	9	114	465	2,189	6,366	1,125	2,900	6	105	396	1,834
Average— 1925-1929 (5 years)	8,962	1,700	4,367	18	72	440	2,345	7,222	1,285	3,659	15	66	354	1,843

(b) Included in the foregoing Table (a) are the following number of specimens sent by private practitioners.

YEAR.	WHOLE JOINT SCHEME.							ABERDEEN CITY CASES ONLY.						
	TOTAL.	Syphilis.				Gonorrhoea.		TOTAL.	Syphilis.				Gonorrhoea.	
		Wassermann.		Spirochete		Gonococcus.			Wassermann.		Spirochete.		Gonococcus.	
		Pos.	Neg.	Pos.	Neg.	Pos.	Neg.		Pos.	Neg.	Pos.	Neg.	Pos.	Neg.
1930	473	87	267	2	7	32	73	325	60	170	1	6	27	61
1929	490	88	245	2	1	35	119	330	50	142	1	1	25	111
1928	547	86	293	2	7	42	117	357	44	166	2	7	39	99
1927	549	77	307	1	3	45	116	338	33	167	1	3	34	100
1926	641	145	333	2	8	54	99	379	71	170	2	7	44	85
1925	631	121	283	1	9	50	167	413	60	146	1	9	45	152
Average— 1925-1929 (5 years)	572	103	292	2	6	45	124	362	52	158	1	5	37	109

(c) Included in Table (a) are also the undernoted numbers of bodies of infants, mostly still-born (all from City) examined for Syphilis.

YEAR.	Number of Bodies Examined.	Number found to contain the Spirochete of Syphilis.
1930	23	0
1929	23	1
1928	25	1
1927	26	1
1926	25	2
1925	69	3
Average—1925-1929 (5 years) . . .	34	2

TABLE XVIII.—CENTRE AT ABERDEEN CITY FEVER HOSPITAL
FOR TREATMENT OF CERTAIN CITY CASES.

TOTAL NUMBER OF NEW CASES.

YEAR	TOTAL	Syphilis		Gonorrhoea		Soft Ch.		Mixed Infs.		Not V.D.	
		M	F	M	F	M	F	M	F	M	F
1930	343	51	36	150	51	2	0	0	2	25	26
1929	320	46	26	137	60	0	0	3	2	21	25
1928	230	36	32	74	38	6	0	0	0	23	21
1927	166	22	18	65	26	3	0	1	3	8	20
1926	146	18	22	37	25	0	0	2	4	20	18
1925	106	12	20	38	28	0	0	1	1	4	2
Aver.—1925-29 (5 yrs.)	193	27	24	70	35	2	0	1	2	15	17

IN-PATIENT CASES.

YEAR	TOTAL	Syphilis		Gonorrhoea		Soft Ch.		Mixed Infs.		Not V.D.	
		M	F	M	F	M	F	M	F	M	F
1930	29	7	4	4	10	0	0	0	2	0	2
1929	43	3	10	12	14	0	1	1	2	0	0
1928	21	1	2	10	5	0	0	0	0	3	0
1927	25	6	7	9	1	0	0	0	1	0	1
1926	22	4	6	5	2	0	0	0	3	1	1
1925	19	5	5	3	3	0	0	1	6	1	1
Aver.—1925-29 (5 yrs.)	26	4	6	8	5	0	0.2	0.4	1	1	1

ATTENDANCES.

YEAR	TOTAL	Syphilis		Gonorrhoea		Soft Ch.		Mixed Infs.		Not V.D.	
		M	F	M	F	M	F	M	F	M	F
1930	17,707	1,837	1,379	9,220	4,258	12	0	157	248	144	452
1929	13,566	1,045	951	7,255	3,443	4	0	273	221	59	315
1928	8,406	521	568	4,584	2,282	12	0	55	131	90	163
1927	6,438	371	385	3,456	1,737	23	0	169	86	15	196
1926	6,712	225	352	2,808	2,294	0	0	261	247	71	454
1925	4,189	98	207	1,803	2,053	0	0	17	4	5	2
Aver.—1925-29 (5 yrs.)	7,863	452	493	3,981	2,362	8	0	155	138	48	226

LABORATORY EXAMINATIONS.

YEAR	TOTAL	SYPHILIS				GONORRHOEA	
		Wassermann		Spirochete		Gonococcus	
		Positive	Negative	Positive	Negative	Positive	Negative
1930	5,495	517	1,954	1	14	300	2,709
1929	4,341	445	1,565	8	24	313	1,986
1928	3,166	320	1,083	1	9	221	1,532
1927	2,524	240	790	2	15	181	1,296
1926	2,317	168	588	3	1	147	1,410
1925	1,561	92	340	1	2	140	986
Average—1925-1929 (5 years)	2,781	253	873	3	10	200	1,442

BLIND PERSONS SERVICES.

In the end of the year under review, a Circular was received from the Department of Health with regard to the future administration of services for the welfare of the blind, consequent upon the operation of the Local Government (Scotland) Act, 1929. The Circular dealt particularly with the registration and certification of blind persons, and suggested the establishment of Regional Clinics where certification would be conducted by two ophthalmic surgeons acting on the same interpretation of blindness. A Blind Persons' Clinic for the area has now been established and is being held at fortnightly intervals.

During the year 1930, 14 persons applied and received from the Town Council assistance towards their maintenance during the period of technical training. At the end of December, 1930, 29 persons in all were receiving such assistance.

MATERNITY AND CHILD WELFARE SERVICES.

Infantile Mortality.

During the year 1930, there were 265 deaths among children under one year of age, as compared with an average of 328 during the 1925-1929 quinquennium. The infant-mortality rate, expressed as deaths per 1,000 births, was 80 during 1930, which is the lowest rate yet recorded. The average rate during the preceding quinquennium was 100.

The chief causes of mortality among infants in 1930, as appearing in Table XIX., were bronchitis and pneumonia, with 69 deaths, as against an average of 66 for the preceding quinquennium; prematurity with 55 deaths, as against 73; and atrophy and debility 32 deaths, as against 47.

Among the specific infectious diseases, measles and whooping cough come first with 11 deaths respectively. In the preceding five years, there was an average of 8 deaths from measles and 11 from whooping cough.

Table XX. shows the death-rates among children under one year of age, in terms of (*a*) legitimate deaths per 1,000 legitimate births, (*b*) illegitimate deaths per 1,000 illegitimate births, and (*c*) total deaths per 1,000 births.

In Table XXI. the causes of death are somewhat differently grouped from those in Table XIX., and death-rates are substituted for numbers of deaths.

In Table XXI. also, two interesting columns show the number of infants surviving at the end of one year from birth, and the proportion which the survivors bear to the population. This rate, which represents the net gain to the population, after the perils peculiar to the first year of life have been passed, was, in 1930, 19.1 per 1,000 of population, as compared with an average of 20.5 for the ten years 1920-1929. This rate is a more exact indication than the birth-rate of the real internal addition to the population.

TABLE XIX.—CAUSES OF DEATH AMONG CHILDREN UNDER FIVE YEARS OF AGE—Year, 1931.

CAUSES OF DEATH	AGE																	Average for preceding 5 years (1925-29)																																																																																																																																																																																																																																																																																																																																																																																																																								
	FIRST YEAR					The Four Quarters					SECOND TO FIFTH YEARS																																																																																																																																																																																																																																																																																																																																																																																																																															
	First Three Months					0-3					-2																																																																																																																																																																																																																																																																																																																																																																																																																															
	0-1	-2	-3	-4	Total	0-1	-2	-3	-4	-5	Total	-2	-3	-4	-5	Total																																																																																																																																																																																																																																																																																																																																																																																																																										
Chicken-pox	2	..	3	..	1	..	7	2	1	2	12	8	0 ²																																																																																																																																																																																																																																																																																																																																																																																																																							
Measles	1	..	..	..	1	10	10																																																																																																																																																																																																																																																																																																																																																																																																																				
Scarlet Fever	1	..	5	2	2	..	2	1	..	3	5	3	3																																																																																																																																																																																																																																																																																																																																																																																																																							
Whooping Cough	1	..	..	..	..	8	8																																																																																																																																																																																																																																																																																																																																																																																																																			
Diphtheria	1	..	2	..	2	..	1	..	..	..	..	1	1																																																																																																																																																																																																																																																																																																																																																																																																																			
Erysipelas	1	..	1	..	..	..	..	1	1																																																																																																																																																																																																																																																																																																																																																																																																																			
Epidemic Cerebro Spinal Meningitis	1	..	1	..	1	..	4	3	2	1	10	7	11																																																																																																																																																																																																																																																																																																																																																																																																																							
Tuberculosis of	1	1	..	..	..	1	1																																																																																																																																																																																																																																																																																																																																																																																																																				
																			

* This column includes all deaths in preceding columns.

TABLE XXI. — ABERDEEN. — INFANT MORTALITY. — Years 1920-1930.

(Corrected for transferred deaths.)

55

YEAR.	DEATH-RATES AMONG CHILDREN UNDER 1 YEAR OF AGE FROM CHIEF CAUSES PER 1,000 BIRTHS.										Death-Rates from All Causes, per 1,000 Births, at Ages								
	No. of Births.	Births per 1,000 of Population.	Deaths of Infants under 1 year.	Deaths of Infants under 1 year per 1,000 Births.	No. of Survivors.	Survivors per 1,000 of Population.	Prematurity, Con- genital Defects, and Dis. of Early Infancy	Dis. of Digest System Wasting and Debility Convulsions.	Bronchitis and Pneumonia	Common Zymotic Diseases.				Tuberculosis.	Syphilis.	Suffocation.	Under 2 Weeks.	Above 2 Weeks and under 6 Months	Above 6 Months and under 1 Year.
1930 . .	3303	20·8	265	80	3038	19·1	24	18	21	3	3	0·3	0	1	0	2	23	38	19
1929 . .	3112	19·7	297	95	2815	17·7	31	27	24	0	2	1	0	3	0·3	2	31	41	23
1928 . .	3314	20·7	313	94	2999	18·8	27	29	17	6	5	0·3	0	2	0·3	2	30	40	24
1927 . .	3182	20·0	334	105	2848	17·9	38	29	25	0·3	2	0	0	3	2	1	40	45	20
1926 . .	3406	21·5	328	96	3078	19·4	30	31	17	2	3	1	0	4	1	1	27	44	25
1925 . .	3390	21·4	368	109	3022	19·1	34	37	18	4	6	1	0	3	1	0·3	31	53	25
Average 1925-1929)	3281	20·7	323	100	2952	18·6	32	31	20	3	4	1	0	3	1	1	32	45	23
1924 . .	3437	21·8	421	122	3016	19·1	33	36	22	6	8	1	0	3	2	2	33	57	32
1923 . .	3766	23·6	391	104	3375	21·2	30	42	18	3	1	0	0	3	3	1	33	51	20
1922 . .	3969	24·8	527	133	3442	21·5	31	37	28	10	12	0·3	0	2	4	1	32	63	38
1921 . .	4254	26·6	460	108	3794	23·7	30	42	22	1	4	1	0	1	2	1	31	60	18
1920 . .	4868	30·3	591	121	4277	26·7	33	42	25	3	4	0·2	0·2	1	4	1	31	69	21
Average 1920-1924)	4059	25·4	478	118	3581	22·4	31	40	23	5	6	0·5	0·04	2	3	1	32	60	26
Average 1920-1929 (ten years))	3670	23·0	403	109	3267	20·5	32	35	22	4	5	1	0·02	3	2	1	32	52	25

Births.

The figures of the births registered in Aberdeen during 1930 are analysed in detail in Chapter VI. of this Report.

The number of births registered in Aberdeen during the year was 3,431 (3,092 legitimate and 339 illegitimate).

The particulars regarding the live-births and still-births occurring during the year are as follows:—

Attended by	No. of Live Births.	No. of Still Births.	No. of Still Births per 1,000 Live Births.
Midwives	702	20	28.5
Maternity Hospital—			
(a) In Wards	610	79	129.5
(b) At Home	211	4	19.0
Medical Practitioners ...	1,920	60	31.3
	<u>3,443</u>	<u>163</u>	<u>47.4</u>

The bodies of 23 still-born children or children who had died soon after birth were examined for spirochetes. None proved to be syphilitic.

Maternal Mortality.

During the year 1930, there were 20 deaths of women from causes associated with pregnancy or child-birth, including all deaths, whatever the precise cause, within four weeks after child-birth (or later if illness originated in the puerperium). Of these 20 deaths, 15 were classified by the Registrar General as due to pregnancy and child-birth.

All these deaths were inquired into by the Health Visitors, or information regarding them was obtained from the attending medical practitioners, who co-operate in giving the desired information.

YEAR	NUMBER OF BIRTHS (Corrected for Transfers)	MATERNAL DEATHS		PUERPERAL SEPSIS	
		Number of Deaths	Rate per 1,000 Births	Number of Deaths	Rate per 1,000 Births
1930	3 303	20	6.1	4	1.2
1929	3,112	24	7.7	5	1.6
1928	3,314	25	7.5	9	2.7
1927	3,182	21	6.6	8	2.5
1926	3,406	20	5.9	8	2.3
1925	3,390	21	6.2	9	2.7
Aver.—1925-29	3,281	22	6.8	8	2.4

It will be seen from the table that during 1930 there were 6.1 maternal deaths per 1,000 births, and of these the deaths from sepsis were 1.2 per 1,000 births.

There were no deaths among the confinements attended by midwives. In 10 cases the patient was attended by general medical practitioners, in 9 by public institutions, and in one case there was no skilled attendance.

Eight of the deaths were associated with pregnancy or abortion, the other 12 being due to or associated with full-time deliveries. Five patients died in their own homes, 14 in institutions and 1 was found drowned.

As far as can be ascertained from the records, the confinement which proved fatal was the first in 6 cases.

Report under Midwives (Scotland) Act, 1915.

The report for the year 1930 under the Midwives (Scotland) Act, 1915, which has already been transmitted to the Central Midwives Board is herewith submitted—

The number of Midwives who, during the year, intimated their intention to practise in the district was 10.

Births in Area or District.

Total Number of Births during 1930	Total Number of Deaths of New-born Children (within ten days) during 1930	Actual Number of Births attended by Midwives during 1930	Actual Number of Deaths of New-born Children (within ten days) occurring in the practice of Midwives during 1930	Actual Number of Cases not attended by a Doctor or Midwife during 1930	
				Births	Deaths
Live—3,443 Still— 163	85	Live—702 Still— 20	13	0	0

Cases of Ophthalmia Neonatorum.

Total Number of Cases during 1930	Actual Number of Cases occurring in the practice of Midwives during 1930	Actual Number of Cases occurring where confinement not attended by a Doctor or Midwife during 1930
67	26	0

Cases of Puerperal Sepsis.

Total Number of Cases during 1930	Total Number of Deaths during 1930 (Uncorrected for Transfers)	Actual Number of Cases occurring in the practice of Midwives during 1930	Actual Number of Deaths occurring in the practice of Midwives during 1930	Actual Number of Cases occurring where confinement not attended by a Doctor or Midwife during 1930	
				Cases	Deaths
72	5	11	0	0	0

Cases of Puerperal Pyrexia.

Total Number of Cases during 1930	Total number of Deaths during 1930.	Actual Number of cases occurring in the practice of Midwives during 1930.	Actual Number of Deaths occurring in the practice of Midwives during 1930.	Actual number of cases occurring where confinement not attended by a Doctor or Midwife during 1930	
				Cases	Deaths
20	1	4	0	0	0

Cases of Still-birth (Dead Born).

Total Number of Cases during 1930	Actual Number of Cases occurring in the practice of Midwives during 1930
163	20

Cases of Emergency.

Notifications were received from midwives of having in 195 cases sent for medical assistance. In all cases medical assistance was obtained. In 141 cases the assistance was required for the mother and in 54 cases for the child.

Summary of Cases.

1. During pregnancy	...	...	...	14
2. During parturition	...	...	...	100
3. After parturition	...	...	...	27
4. For infant	...	...	...	54
Total				195

£241 5s. 6d. was paid to doctors for the above services.

General Report on the Working of the Act.

During the year the Act has worked smoothly in this Area. The Midwives attended 20 per cent. of the Total Births.

Home Visitation.

A record of the number of first visits and re-visits to infants under 1 year of age, to children in the 1-5 year period, and to expectant mothers, is here submitted :—

Infants under One Year				Children One to Five Years				Ante-Natal Cases	
First Visits		Re-visits		First Visits		Re-visits		First Visits	Re-visits
Legit	Illegit.	Legit.	Illegit.	Legit.	Illegit.	Legit.	Illegit.	161	108
2660	248	30499	3086	632	86	5443	389	<div></div>	
<div></div>		<div></div>		<div></div>		<div></div>		269	
2908		33585		718		5831			
<div></div>				<div></div>					
36493				6549					

Voluntary Health Visitors' Report.

The Voluntary Health Visitors' report, which is separately submitted, indicates the valuable contribution that is made to the work of Maternity and Child Welfare by the voluntary workers.

Ante-Natal Consultations.

The extent and nature of the ante-natal work undertaken during the year at the Maternity Hospital and Ante-Natal Annexe (consultations twice weekly, of about two hours' duration), at the City Hospital (consultations once weekly), and at the Child Welfare Clinics (daily consultations) is summarised as follows:—

	Maternity Hospital Ante-Natal Annexe.	City Hospital Ante-Natal Clinic.	Child Welfare Clinics.
Total Number of Attendances	2616	252 + 225* + 51†	338
Total First Attendances	840	130 + 95* + 28†	344
Number of First Ante-Natal Cases—			
Referred to Ante-Natal Ward	—	—	—
Referred to family doctor or otherwise	—	1	11
Treated at Clinic	—	124	246
Referred to Maternity Hospital Ante-Natal Clinic	—	5	13
Not Pregnant	—	—	2
Referred to City Hospital Ante-Natal Clinic	—	—	72
Total	840	130	344

* Post-Natal Cases.

† Not Pregnant.

Post-Natal and other Consultations.

There were 1,036 post-natal consultations during the year, of which 691 were first attendances.

Child Welfare Consultations.

The extent and nature of the work done at the Child Welfare Clinics can be summarised as follows:—

Name of Centre.	Number of Weekly Sessions.	Duration (hrs.)
Woodside	1	1
Charlotte Street	2	2 to 2½
Torry	1	1
Old Aberdeen	1	1
Holburn (voluntary)	1	1
Castlegate	3	1½ to 2½
Gerrard Street (voluntary)	1	1
(a) Total number of attendances—(1) Under 1 year of age ... ..	...	3,843
(2) Over 1 year of age ... ..	...	1,769
(b) Number of first attendances—(1) Under 1 year of age ... ..	...	1,627
(2) Over 1 year of age ... ..	...	928

(c) Illnesses recorded—				Children under 1 year.	Children over 1 year.
Digestive System—Feeding				221	9
Vomiting				97	20
Enteritis				72	42
Constipation				85	16
Malnutrition				1	17
Thrush				20	10
Parasitic worms				2	14
Respiratory System—Nasal catarrh				35	9
Bronchitis				51	22
Pneumonia				3	2
V.D.—Syphilis				—	—
Gonorrhœa				—	—
Circulatory System				—	1
Nervous System				1	4
Skin—Infective Conditions				35	44
Other				135	61
Dental caries				—	297
Genito-urinary System				13	14
Eyes—Acute infections				22	11
Refractive errors				1	13
Ears				24	23
Nose and Throat—Tonsils and adenoids				1	22
Other				1	9
Infectious diseases				4	24
Tuberculosis				1	1
Enlarged glands				5	13
Congenital malformations				81	13
Accidents				5	12
Rickets				10	100
Hernia				31	13
Hydrocele				7	—
Vaccination				558	22
Normal				52	16
Various				50	48
Bones, Joints				—	6
Total				1,627	928

Special Treatment Centres.

(1) *Teeth*.—The Dental Clinic which now functions under the Town Council provided the following services:—

- (a) Number of Attendances—(1) Mothers ... 434 (319 cases),
(2) Children ... 382 (358 cases).

(b) Classified Summary of Conditions remedied—

	Extractions.	General Anaesthetics.	Anaesthetic (Local).	Fillings.	Fillings, Temp.
(1) Mothers	2,299	403	4	11	0
(2) Children	1,252	379	0	0	0

(c) Number of Dentures supplied—*Nil*.

(d) Net cost of Dentures, less sums recovered—*Nil*.

(2) *Eyes*.—The Ophthalmic Clinic which now also functions under the Town Council, and which is confined to the treatment of cases suffering from refractive defects, etc., was utilised to the extent of providing treatment for 18 cases of strabismus. In other cases, treatment was obtained by the parents directly from the Aberdeen Royal Infirmary or Eye Institution, and several other cases seen at the Child Welfare Clinics were asked to come up later for examination, as the children were too young to wear glasses or the defect was slight.

(3) *Other Ailments*.—No records available.

(4) *Ultra-violet Light Clinic*.—

Children under 5 years of age treated at the City Hospital—

Number of cases referred by Maternity and Child Welfare Medical Officer ...	36
Number of cases referred by general practitioners	24
	—
Total	60
	==

The conditions treated, with the results of treatment, are set out in the following table:—

Disease	Cured	Improved	Stationary	Worse	Total
Rickets	21	5	2	0	28
Wasting and Debility	8	1	0	0	9
Adenopathy	5	8	2	0	15
Chronic Bronchitis	1	3	0	0	4
Backwardness	1	3	0	0	4
Total	36	20	4	0	60
Percentages	60%	33%	7%	0%	100%

Day Nurseries, Kindergarten, and Play Centres.

The Day Nursery at Charlotte Street undertakes the main work under this heading, and there is, in addition, a play centre at the Castlegate Child Welfare Centre, which is open daily from 2 to 5 p.m. The attendances and charges at the Charlotte Street Day Nursery are as follows:—

(a) Total number of Attendances—8,106.

Fresh Admissions—(1) Under 1 year, 26; (2) over 1 year, 38—64.

Average Daily Attendance—31.

(b) Charges made—5d. per day for one child; 9d. per day for two children; 1/- per day for three children.

(c) Receipts—£161 17s. 7d.

Food and Milk.

During the year, food and milk were supplied to the following extent:—

(a) Number of Applicants for Food or Milk—									
(1) Mothers	...	...	...	...	...	...	...	...	190
(2) Children	...	...	...	...	...	...	...	...	210
(b) Number of cases certified on medical grounds as requiring Food or Milk—									
(1) Mothers	...	...	...	...	...	...	...	...	176
(2) Children	...	...	...	...	...	...	...	...	196
(c) Number of cases under (b) certified as necessitous—									
(1) Mothers	...	...	...	...	...	...	...	...	176
(2) Children	...	...	...	...	...	...	...	...	196
(d) Information as to supply of Milk Substitutes, Medicinal Foods, &c.—									

In addition to the above, milk substitutes in the form of Glaxo were supplied to 25 recipients (not included in (b)) at cost price on necessitous grounds. 649 Soup Kitchen checks, at a cost of 2d. each, were given free to 14 deserving cases (not included in (b)), whereby such cases received soup and bread at the Public Soup Kitchen. Cod Liver Oil Emulsion, Glaxo, Roboleine, Virol, etc., were supplied at cost price or free, at the discretion of the Medical Officer, where considered necessary.

Measles and Whooping-Cough.

As regards children under five years of age suffering from measles and whooping-cough, the following information is submitted:—

		Measles	Whooping Cough
(a) Number of cases notified (partial notifications)	...	719	222
(b) Total number of deaths	...	23	14
(1) From measles or whooping-cough	...	1	0
(2) From sequelæ	...	22	14
(c) Number of cases removed to Hospital	...	74	16
(d) Number of special domiciliary visits—			
(1) First visits	...	719	222
(2) Total visits	...	1,450	465

(e) Details of special staff engaged for epidemics—one health visitor specially engaged for infectious disease work, and in addition one senior nurse was engaged full time from October to December, 1930, in visiting cases of measles in their own homes.

Ophthalmia Neonatorum.

Ophthalmia neonatorum is referred to in the sections of this Report dealing with infectious diseases and venereal diseases. The following additional information is submitted:—

Year	Number of Registered Births	Number of Notified Cases of Ophthalmia Neonatorum	Rate per 1,000 Registered Births
1930	3,431	67	19·5
1929	3,194	70	21·9
1928	3,448	51	14·8
1927	3,324	54	16·2
1926	3,557	48	13·5
1925	3,535	59	16·7
1924	3,527	69	19·6
1923	3,847	63	16·3
1922	4,038	47	11·6
1921	4,336	100	23·1

- | | | |
|------------------------------|---|-----------------|
| Insanity of Pregnancy | 1 | Case unchanged. |
| Myositis | 1 | „ cured. |
| Chorea | 1 | „ improved. |
2. Abortions—
- (a) Number of cases—20 incomplete; 1 threatened 21
- (b) Results—1 died of Pulmonary Tuberculosis and collapse; 2 admitted as septic cases—transferred to City Hospital; 1 became septic and transferred to City Hospital. Others recovered.
3. Normal confinements—
- | | |
|--|----|
| (a) Total No. (i) with medical attendance | 33 |
| (ii) without medical attendance | 0 |
- (b) No. of deaths (classified)—0.
4. Abnormal or complicated confinements—
- | | |
|--|---|
| (a) Total No. (i) instrumental deliveries | 1 |
| (ii) other deliveries | 9 |
- (b) Statement of conditions found—
- | | |
|--------------------------------------|---|
| Contracted pelvis | 2 |
| Face presentation | 3 |
| Breech presentation | 2 |
| Hydramnios | 1 |
| Pneumonia complicating labour | 1 |
| Inertia | 1 |
- (c) Number of deaths (classified)—2.
- Pneumonia, 1; Coal-gas poisoning, 1.
5. Number of infants born (i) alive—38; (ii) still, 5.
6. Number of deaths of infants under 1 week—0.

Maternity Homes (Private).

1. Pre-natal cases—
- | | |
|------------------------------------|---|
| (a) Number of cases treated | 2 |
|------------------------------------|---|
- (b) Statement of conditions found—
- | | |
|-----------------------------|---|
| Heart disease | 1 |
| Nervous irritability | 1 |
- (c) Statement of results of treatment—
- | | |
|---|--|
| Death during delivery from heart disease and shock. | |
| Recovery. | |
2. Abortions—
- (a) Number of cases—1 threatened abortion.
- (b) Results—Settled up.
3. Normal Confinements—
- | | |
|--|----|
| (a) Total No. (i) with medical attendance | 67 |
| (ii) without medical attendance | 5 |
- (b) Number of deaths—0.
4. Abnormal or complicated confinements—
- | | |
|--|----|
| (a) Total No. (i) instrumental deliveries | 52 |
| (ii) other deliveries | 23 |
- (b) Statement of conditions found—
- | | | | |
|------------------------|----|----------------------------|---|
| Perineal tear | 28 | Breech presentation | 3 |
| Inertia | 14 | Retained placenta | 3 |
| After induction | 6 | Narrow outlet | 2 |
| Disproportion | 5 | Version | 2 |
| O. P. position | 5 | Miscellaneous | 7 |
- (c) Number of deaths (classified)—0.
5. Number of infants born—(i) alive, 140; (ii) still, 7.
6. Number of deaths of infants under 1 week—2.

Homes for Unmarried Mothers before and after Confinement.

Unmarried mothers in their second or subsequent pregnancies are admitted to Loch Street Home. This Home is centrally situated and permits mothers who are employed to continue breast-feeding. Unmarried mothers with their first pregnancy are admitted to Burnside Home. A total of 23 unmarried mothers was admitted to Loch Street Home and 56 unmarried mothers to Burnside Home.

Hospitals for Sick Children.

The *Royal Hospital for Sick Children* is a voluntary institution, and surgical and medical cases are freely admitted there. No separate records are kept of the work done in connection with the treatment of children under five years of age, nor are City cases differentiated from County cases.

The *Marasmus Ward at the City Hospital* provides 22 cots for infants suffering chiefly from nutritional disorders. In all, a total of 162 infants was admitted to this ward during the year.

			Under One Year	Over One Year
Number in Hospital on 1st January, 1930	...	...	14	7
Number of Admissions during year	...	...	118	14
Number in Hospital on 31st December, 1930	...	...	16	7
Number discharged during year	...	...	86	12
Number died during year	...	...	30	2

The conditions treated, with the results of treatment, were as follows:—

	Cases	Improved	Died	Removed at request of Parents or transferred to others Wards
Digestive System—Vomiting	6	5	0	1
Enteritis	21	18	2	1
Constipation	5	5	0	0
Malnutrition	55	43	9	3
Respiratory System—Pneumonia*	13	0	13	0
Bronchitis	6	6	0	0
Skin—Infective conditions	9	9	0	0
Other	0	0	0	0
Venereal Disease—Syphilis	1	1	0	0
Rickets	15	15	0	0
Prematurity	5	1	4	0
Miscellaneous	7	4	2	1
Ears discharging	3	3	0	0
Eye conditions	0	0	0	0
Tuberculosis	3	1	0	2
Congenital Malformation	3	3	0	0
Normal	5	5	0	0
Nervous System	1	1	0	0
Nephritis	1	0	1	0
Hypertrophic pyloric stenosis	1	0	1	0
	160	120	32	8

*With reference to the cases of Pneumonia, it has to be noted that these children were admitted in poor condition suffering from Malnutrition, and that the Pneumonia which caused death was a terminal condition.

Average Period of Residence—46 days.

Note as to Infections Diseases:—

Diphtheria	...	...	...	...	...	...	...	...	1 Case.
Measles	...	...	...	...	...	...	...	...	1 Case.
									—
									2 Cases.
									—

A *Ward at Woodend Hospital* provides 14 cots for infants suffering chiefly from rickets and orthopaedic disabilities.

							Under one year.	Over one year.
Number in Hospital on 1st January, 1930	...	...	...	...	...	0	...	4
Number of Admissions during year	...	...	...	...	...	1	...	21
Number in Hospital on 31st December, 1930	...	...	...	...	...	0	...	0
Number discharged during year	...	...	...	...	...	1	...	24
Number died during year	...	...	...	...	...	0	...	1

Average Period of Residence—143 days.

The number of cases treated were 25 cases of Rickets and 1 case of Malnutrition. Of these, 18 improved, 1 died, and 7 were removed at the request of parents or transferred to other wards.

With regard to the treatment of Rickets, the procedure which has been found almost universally successful is as follows:—

1. Skiagram on admission.
2. Two months' "Specific" treatment—ultra-violet rays, etc.
3. Skiagram.
4. Osteotomy and plaster for deformities.
5. Renewal of plaster in three weeks and re-application for a similar period.
6. Removal of plaster, skiagram, two days in bed, five days up. Discharge.

Convalescent Homes.

Burnside Home provides accommodation for 10 mothers and 42 children. The Home is mainly utilised for the admission of married women after their confinement, with the object of providing them with rest and instruction in baby care.

Loch Street Home provides accommodation for 8 mothers and 10 infants, and is mainly used for admission of unmarried mothers both before and after confinement. Details of cases treated are as follows:—

Number of cases treated—

							Burnside Home.	Loch Street Home.
Mothers	...	...	...	...	...	104	...	19
Children under 1 year	...	...	...	...	...	161	...	21
Children over 1 year	...	...	...	...	...	8	...	36
						273		76
						—		—

Average duration of residence—

Mothers	...	...	...	...	...	17 days	...	41 days
Children	...	...	...	...	...	79 days	...	73 days

Note as to Infectious Diseases—

Chicken-pox	...	...	...	...	...	—	...	2 cases
Diphtheria	...	...	...	...	...	1 case	...	—
Scarlet Fever	...	...	...	...	...	3 cases	...	—
Shame Dysentery	...	...	...	...	...	1 case	...	—
Measles	...	...	...	...	...	2 cases	...	—
Whooping Cough	...	...	...	...	...	—	...	1 case
Broncho-pneumonia	...	...	...	...	...	—	...	1 case

Boarding-Out.

No arrangements are made for boarding-out City infants.

Home-Helps.

24 Home-Helps were employed in the homes; average period of assistance, 28 days; cost	...	...	...	...	...	£48	0	8
6 Home-Helps were employed for washing; average number of washings per patient, 5 cost	...	...	...	...	...	5	8	6
1 Home-Help was employed for special cleaning	...	...	...	...	...	0	5	0
Total cost						£53	14	2

Educational.

The short course of Health Lectures for women by Dr. M. Esslemont and Dr. Howie were continued in 1930.

A course of lectures was given by Dr. Esslemont at Castlegate Centre, on Thursday evenings; average attendance, 70; and a course of lectures was given by Dr. Howie at Woodside Centre on Wednesday evenings; average attendance, 45.

Lectures and Demonstrations at Child Welfare Centres.—From September to June, lectures or talks of half an hour's duration on Motherhood and Infant Care are given by the Child Welfare Medical Officer to mothers attending the Centres. At each Centre cooking demonstrations are given once a month by one of the voluntary workers, or by a Domestic Science teacher from the Education Committee's staff, and demonstrations on dressmaking, etc., are given once a month by one of the voluntary workers. The attendances of the mothers at these meetings are given in the annual report of the Aberdeen Mother and Child Welfare Association.

Note of Agencies, not referred to above, Associated with Scheme.

The Department works in close co-operation with the Aberdeen Association for Improving the Condition of the Poor. The Shelter for children provided by the Association continues to prove of great value.

Linn Moor Home.—During the year, eight cots for children from 3 to 5 years of age were made available at Linn Moor Home, a convalescent home in the country which accommodates children who are requiring fresh air and good food. Full use has been made of this accommodation.

The Treatment of Puerperal Fever and Pyrexia.

The Public Health (Notification of Puerperal Fever and Pyrexia) Regulations (Scotland), 1929, made Puerperal Pyrexia a notifiable disease, and the value of these Regulations lies in the fact that if notification is observed, and efficient treatment subsequently employed, maternal mortality will be diminished. Puerperal Pyrexia is defined as "any febrile condition occurring within twenty-one days after child-birth or miscarriage in which a temperature of 100.4° F. or more has been sustained during a period of twenty-four hours, or has recurred during that period." It is suggested that a close watch be kept on the pulse-rate, and should the pulse-rate rise to over 90 per minute or fail to fall to a rate under 90 even although the temperature does not rise to 100.4° F., a swab from the cervix and blood for culture should be sent to the Bacteriological Laboratory to enable diagnosis to be made as early as possible.

The following Table gives various particulars relating to the number of cases notified :—

	Puerperal Fever.	Puerperal Pyrexia.
(1) Number of Cases notified	72	20
(2) Number removed to City Hospital	64	10
(3) Total number of Deaths	*5	1
(4) Number of Cases following instrumental delivery	19	2
(5) Number of Deaths occurring under heading (4)	2	0

*Including 1 County Case.

From the information given under headings (1) and (2), it will be seen that, of the 72 cases of Puerperal Fever notified, 64 were removed to the Puerperal Wards of the City Hospital, and that, of the 20 cases of Puerperal Pyrexia notified, 10 were admitted to the City Hospital.

The Medical Officer for the Maternity and Child Welfare Scheme communicated with the medical attendants of all the other cases, and in all cases where doubt existed as to the diagnosis bacteriological examination was obtained. There was no request for skilled nursing in the home at the expense of the Local Authority as such had already been provided or was obtained through the District Nursing Association. In no case did death from Puerperal Fever (or Pyrexia) occur in the patient's home.

In August, 1927, a letter was sent by the then Medical Officer of Health to all practitioners in the area—with which was enclosed the Board's circular letter of 28th July, 1927—dealing with the early notification of Puerperal Fever and offering hospital accommodation for all cases of Puerperal Fever and Pyrexia. The medical practitioners have responded heartily and have taken full advantage of the facilities offered.

In 1926 the number of cases of Puerperal Fever notified was 36, and in 1927 it was 38. The number of cases of Puerperal Fever and Pyrexia notified in 1928 was 73, in 1929, 70, and in 1930, 92.

As stated in a previous Annual Report, when haemolytic streptococci are found during the bacteriological examination of a case, nose and throat swabs are obtained from the attendants (medical, nursing and lay) with a view to determining the source of infection.

It is proper here again to refer to the important and valuable work of Dr. Smith, a synopsis of which appears in Chapter I. The following letter was sent to all the medical men practising within the City and in the neighbouring Counties :—

City Health Department,
4 Albyn Place, Aberdeen.

Dear Sir,

Puerperal Fever—Sterilisation of Drums, etc.

On 31st January last, I sent you a copy of Dr. Smith's Report, in which was emphasised the importance of the masking of attendants and the use of gloves in midwifery practice.

It has been suggested that a suitable outfit should consist of the following:—

- (1) One gown with sleeves.
- (2) A face-mask which, to be efficient, would require to have some impervious material, like rubber or jaconet, placed between layers of gauze. The mask would be attached to the head with tapes. A suitable mask is that described in the British Medical Journal, of 28th February last; the cost is 1/-.
- (3) Gloves.
- (4) Small packet of French Chalk.
- (5) Six towels.
- (6) Twenty gauze swabs.
- (7) Small packet of cotton wool.
- (8) Gauze—one wide strip (6 inches) and one narrow strip (3 inches) for packing purposes.

A drum, with this outfit, is on view at the Surgery, City Hospital, where interested practitioners may see it. With regard to the size of the drum, the most convenient dimensions appear to be $9\frac{1}{2}$ inches by 13 inches: such a drum is listed by Messrs. Down Brothers at £2 2s.

Accordingly, arrangements have now been made whereby practitioners who may care to procure drums may have these with their contents sterilised, free of cost, at the Aberdeen City Hospital, where sterilisation is performed twice daily. The name of the general practitioner would require to be stamped on the drum.

In addition, a certain number of complete outfits will be available presently for emergency or special cases, and may be had on application to the Resident Medical Officer at the City Hospital.

Dr. Smith will gladly show practitioners a suitable type of mask and will discuss the various methods of sterilising rubber gloves.

Yours faithfully,

HARRY J. RAE,
Medical Officer of Health.

MENTAL HEALTH SERVICES.

1. Kingseat Mental Hospital.

Under the provisions of the Local Government (Scotland) Act, 1929, the administration of the Kingseat Mental Hospital was transferred to the Public Health Committee of the Town Council.

TABLE XXII.—KINGSEAT MENTAL HOSPITAL.

ADMISSIONS, RE-ADMISSIONS, DISCHARGES, AND DEATHS OF CERTIFIED PATIENTS
DURING THE YEAR ENDING 31ST DECEMBER, 1930.

	M.	F.	T.	M.	F.	T.
In the Hospital, 31st December, 1929	356	345	701	...	...	...
Absent on Probation ... ..	...	...	...	...	...	...
„ Pass ... ..	...	...	...	...	...	...
Total on Register ... ..	...	...	...	356	345	701
Cases Admitted—						
First admissions	39	42	81	...	...	...
Not first admissions	12	10	22	...	...	...
Total Cases admitted during the year ... ..	...	...	...	51	52	103
Total Cases under care during the year ... ..	...	...	...	407	397	804
Cases discharged—						
Recovered	17	29	46	...	...	...
Relieved	9	2	11	...	...	...
Not improved ... ..	...	...	...	...	...	...
Died	27	27	54	..	...	...
Total Cases discharged and died during the year ... ..	...	...	...	53	58	111
Remaining in the Hospital, 31st December 1930	354	339	693	...	...	...
Absent on Probation ... ..	...	...	...	...	...	...
„ Pass ... ..	...	...	...	...	...	...
Total on Register ... ..	...	...	...	354	339	693
Average daily number on Register during the year ... ..	...	...	...	354	341	695
*Persons under care during the year ... ..	...	...	...	...	...	...
Persons admitted ... ..	...	...	...	51	52	103
Persons recovered ... ..	...	...	...	17	29	46
Transferred to other Asylums ... ..	...	...	...	2	1	3
„ from „ ... ..	...	...	...	6	5	11

*Persons, i.e., separate persons, in contradistinction to cases, which may include the same individual more than once.

TABLE XXIII.—KINGSEAT MENTAL HOSPITAL.

ADMISSIONS, RE-ADMISSIONS, DISCHARGES, AND DEATHS OF CERTIFIED PATIENTS
FROM THE OPENING OF THE HOSPITAL, 16TH MAY, 1904, TO 31ST DECEMBER, 1930.

	M.	F.	T.	M.	F.	T.
Persons admitted during the period from 16th May, 1904, to 31st December, 1930	1526	1393	2919	...	...	...
Re-admissions	237	292	529	...	...	...
Total Cases admitted .. ...	...	...	...	1763	1685	3448
Discharged Cases —						
Recovered	528	560	1088	...	...	...
Relieved	206	173	379	...	...	...
Not improved	34	22	56	...	...	...
Died	641	591	1232	...	...	...
Total Cases Discharged and Died since the opening of the Hospital .. ...	...	...	...	1409	1346	2755
Remaining on 31st December, 1930 .. ...	...	...	...	354	339	693
Average number on Register during the period ..	...	...	...	270	260	530
Cases transferred from other Asylums .. ...	...	...	...	326	306	632
Cases transferred to other Asylums .. ...	...	...	...	86	57	143

TABLE XXIV.—KINGSEAT MENTAL HOSPITAL.
Admissions, Discharges, and Deaths, with the Mean Annual Mortality and Proportion of Recoveries per cent.
of the Admissions of Certified Patients for each Year since the opening of the Hospital, 16th May, 1904.

Year.	Admitted.			Discharged.						Died.			Remaining 31st December in each year.			Average Numbers Resident.			Percentage of Recoveries on Admissions.			Percentage of Deaths on the Average Numbers Resident.		
				Recovered.			Relieved.																	
	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.
1904	167	177	344	12	11	23	2	2	4	1	2	3	146	156	302	139.2	148.8	288	30	25.5	27.7	4.3	4	4.1
1905	89	82	171	24	23	47	1	1	2	2	1	3	192	193	385	169.4	176.1	315.5	26.9	28	27.4	10	11.3	10.7
1906	80	52	132	29	26	55	7	7	14	2	...	2	216	196	412	210.3	193.1	403.4	36.2	30	41.6	8.5	8.2	8.4
1907	45	41	86	16	18	34	5	7	12	2	...	2	221	195	416	217	195	412	35.5	43.9	39.5	7.8	8.7	8.2
1908	50	53	103	17	25	42	11	11	22	1	1	2	220	194	414	217	192	409	34	47.1	40.7	10.1	8.8	9.5
1909	54	64	118	18	15	33	9	11	20	7	1	8	234	217	451	223	211	434	33.3	23.4	27.9	5.8	6.6	6.2
1910	53	59	112	15	35	50	12	7	19	...	...	...	234	217	451	223	211	434	28.3	59.3	44.6	6.3	11.1	8.6
1911	55	60	115	20	22	42	10	9	19	...	...	...	244	216	460	237	216	453	36.3	36.6	36.5	9.7	13.1	11.3
1912	52	64	116	13	31	44	15	5	20	...	...	...	244	216	460	237	213	458	25	48.4	37.9	12.8	15.5	14.1
1913	67	65	132	20	16	36	7	4	11	3	...	...	249	227	476	249	218	467	29.8	24.6	27.2	12.5	12.5	12.5
1914	67	71	138	23	27	50	5	3	8	...	1	1	257	227	494	253	252	487	34.3	38	36.2	10.5	8.3	9.2
1915	90	81	171	22	33	55	10	6	16	2	2	4	284	256	540	275	252	527	24.4	40.7	32.1	13.2	13.7	13.3
1916	59	56	115	21	20	41	3	4	7	...	1	3	291	266	557	289	268	557	35.7	35.7	35.6	9.6	7.8	8.8
1917	56	66	122	20	12	32	4	5	9	2	1	3	283	276	559	287	276	563	22.2	25.4	23.4	13.7	10.2	11.9
1918	90	55	145	20	14	34	5	4	9	1	2	3	306	284	590	299	284	583	18.5	34.4	26.6	13.7	7.4	8.9
1919	54	55	109	10	19	29	2	2	18	2	...	2	289	292	581	290	287	577	46	40.9	43.5	9.6	6.4	8
1920	50	44	94	23	13	36	4	4	10	0	1	2	289	280	569	290	279	569	33.3	26.7	29.4	6.8	8.3	7.9
1921	39	56	95	13	15	28	6	3	19	3	2	5	286	302	588	290	300	590	32.8	38	27.2	10	6.6	8.3
1922	72	63	135	23	15	38	4	6	29	0	1	1	305	314	619	305	311	616	41.3	37.7	39.5	7.2	4.5	6
1923	70	53	123	19	24	43	8	7	26	2	2	2	305	314	619	305	311	616	32.3	44.4	38	8.3	5.3	6.6
1924	46	45	91	19	19	38	4	6	10	0	2	3	309	319	628	311	317	628	50	31.3	41.7	5	7.4	6.2
1925	59	54	113	19	24	43	3	7	10	1	0	1	321	323	644	316	323	639	38.8	33.3	35.5	4.5	5.2	4.9
1926	64	51	115	32	16	48	3	7	10	1	1	1	333	331	664	331	321	622	34.3	34.3	34.4	8.7	8.2	8.4
1927	53	51	104	20	17	37	5	9	14	1	2	3	345	339	684	337	335	672	31.3	31.5	31.4	10.8	9.7	10.3
1928	64	58	122	22	20	42	6	7	13	1	...	...	356	345	701	349	344	693	33.3	35.7	44.6	7.6	7.9	7.7
1929	67	57	124	21	18	39	6	8	14	...	...	...	354	339	693	354	341	695	33.3	35.7	44.6	7.6	7.9	7.7
1930	51	52	103	17	29	46	9	8	11	...	...	...	274	263	537	270	260	530	32.7	36.3	34.4	8.8	8.7	8.7
Totals & Avg's.	1763	1685	3448	528	560	1088	206	173	379	34	22	56	274	263	537	270	260	530	32.7	36.3	34.4	8.8	8.7	8.7

TABLE XXV.—KINGSEAT MENTAL HOSPITAL.
Admissions, Discharges, and Deaths, with the Mean Annual Mortality and Proportion of Recoveries per cent. of the
Voluntary Admissions for each Year since the Admission of Voluntary Patients was agreed to—8th February, 1927.

Year.	Admitted.			Discharged.						Died.			Remaining 31st December in each year.			Average Numbers Resident.			Percentage of Recoveries on Admissions.			Percentage of Deaths on the Average Numbers Resident.		
	M. F. T.			Recovered.			Relieved.			Not Improved.			M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.
				M.	F.	T.	M.	F.	T.	M.	F.	T.												
1927	4	1	5	...	...	1	...	...	1	...	...	4	4	...	4	1	...	...	...	...	...	...	...	...
1928	17	14	41	4	1	5	...	...	4	...	...	10	13	23	23	8	...	...	23	7	...	...	...	...
1929	10	5	5	2	2	4	...	...	1	...	...	14	12	26	26	11	10	21	20	40	26	...	10	4.7
1930	6	4	10	2	1	3	...	...	...	...	2	14	15	29	29	13	13	26	33	25	30	15	0	7.6
Totals & Avg's	37	24	61	8	4	12	6	2	8	7	2	23	23	46	46	8	7	15	19.0	18.0	18.0	3.7	2.5	3.0

Table XXII. shows the admissions, re-admissions, discharges and deaths of *Certified Patients* during the year ended 31st December, 1930. In Table XXIII. information is given as to the admissions, re-admissions, discharges and deaths of *Certified Patients* from the date of the opening of the Hospital, 16th May, 1904, until the end of 1930. Table XXIV. shows the admissions, discharges and deaths with the mean annual mortality and proportion of recoveries per cent. of the admissions of *Certified Patients* for each year since the opening of the Hospital in 1904. Voluntary patients were first admitted to Kingseat Mental Hospital in February, 1927, and the admissions, discharges and deaths, with the mean annual mortality and proportion of recoveries per cent. of the voluntary admissions for each year since 1927 appear in Table XXV.

In 1930, visits were made by Commissioners of the General Board of Control, and extracts from their reports are appended herewith:—

Aberdeen City District Asylum,
14th and 15th May, 1930.

The number of patients on the Register is 696—4 more than that recorded on 10th October, 1929. There are also 26 Voluntary inmates— an increase of 3. The changes among the registered patients were the admission of 71, the discharge as recovered of 27, the discharge unrecovered of 6, and the death of 34. Of voluntary inmates, 9 have been admitted, 2 have left, and 2 have died.

With the exception of one woman who was absent “on Pass” the patients were seen. Several of them asked for interviews, which were given to them. In every case the patients interviewed desired to be liberated. Several of them had been given interviews on previous visits. In no case was it considered advisable to recommend discharge. There were no complaints against the management.

The causes of the deaths were in 11 instances the result of heart disease, 6 patients died from general paralysis, 4 of arterio-sclerosis, 3 of tubercular affections, 2 of cerebral haemorrhage, 2 of broncho-pneumonia, 2 of acute bronchitis, 1 of exophthalmic goitre, 1 from the exhaustion of acute mental disease, 1 of gastric ulcer, and 1 of syphilis.

In 10 instances a *post-mortem* examination was made to verify the cause of death. One of the deaths was suicidal. A male voluntary patient jumped through a window, and in doing so severed a brachial artery. He was removed to the Infirmary, but died after operative procedure there. This accident was, as is required by Statute, reported to the Procurator Fiscal and to the General Board. In addition to this death, which was recorded in the Register of Accidents, there were two other accidents. A male patient fractured the humerus as the result of a fall, and a female patient fractured the femur during a severe epileptic seizure.

One hundred and forty patients were confined to bed for treatment of mental conditions, bodily illness and senility or infirmity.

There has not been any use of restraint or seclusion.

All parts of the Institution were found in good order, clean, well heated, properly ventilated, and in good hygienic conditions.

The furnishings and decorations of the several sitting-rooms and dormitories are substantial and attractive, and everything is done to make the patients comfortable. The patients are well fed, and their clothing was neat, serviceable and well cared for.

The meals are served to the patients in an attractive and orderly way.

The nursing of all the patients is instructed and efficient, and the routine medical work is carried out in a painstaking manner.

The verandah referred to in the previous report is nearing completion and should be of much benefit to the patients in the parole villa. The verandah being furnished with vitreous glass is so orientated as to form a sun room.

The administration of the Institution continues to be maintained at a high standard.

The Statutory Registers were examined and found to be correctly kept.

During the visit the Secretary of the Board accompanied me.

H. C. MARR,

Commissioner of the General Board of Control.

Aberdeen City District Asylum,

30th September, and 1st October, 1930.

There are 696 certified patients on the Register at this date, the same number as at the previous visit on 14th May. Of these, 359 are males and 337 females.

Twenty-seven Voluntary patients are in residence at this date, an increase of one upon the number of patients at the date of the previous visit.

The following changes have to be recorded:—

37 certificated patients have been admitted, 20 have been discharged recovered, 3 have been discharged unrecovered, and 14 died. Four Voluntary patients have been admitted, and 3 left.

The causes of death were registered as due to disease of the heart and blood vessels in 3 cases, broncho-pneumonia in 2 cases, and senile decay, Huntington's Chorea, liver abscess, encephalitis lethargica, cerebral haemorrhage, kidney disease, epilepsy, general paralysis and cancer in one case each. In 4 instances the cause of death was verified by *post-mortem* examination.

One patient escaped and was absent for a few days before being brought back.

There are no entries in the Register of Restraint and Seclusion.

One major accident is recorded, a female sustaining a fracture of the leg as a result of a fall in an epileptic seizure.

Fifty-three patients were confined to bed for the treatment of acute mental symptoms, 34 for bodily disease and 46 on account of senility or infirmity. The verandahs attached to the hospitals were fully occupied. The verandah attached to one of the villas on the female side, which will be used for the accommodation in bed of quiet senile patients, is ready for occupation. This is a part of an admirably planned verandah extending along two sides of the building. The major portion forms a most attractive sun-room, with access direct from the sitting-rooms, and will make a valuable addition to the day-room space, as well as providing accommodation for a sewing room and work on the lines of occupational therapy.

At the time of the visit one patient was absent "on pass." With this exception, all the patients on the Registers were seen.

The medical care and nursing supervision are of a very high standard.

The classification of the inmates, which is a feature of the asylum, and is so markedly assisted by the villa system, was much in evidence. On each side there are villas where the patients have full parole and move in and out to their occupations as they please. The accommodation in the closed villas is now practically full despite the provision a few years ago of an additional villa on each side. When these villas were opened, the resident population was about 650. It is now 723.

The patients' dietary is well varied and satisfactory. On the second day of the visit the dinner was tasted. It consisted of broth, bread, beefsteak pie and potatoes. The cooking was excellent. The meal was a most appetising one and was much appreciated by the patients.

The kitchen and stores were visited. A new large refrigerating chamber has been installed and a new mincer.

The villas are all most attractively furnished. The equipment is most modern and is maintained in first class order, and altogether the conditions under which the patients live could scarcely, for an institution, be excelled.

There were no complaints affecting the management. A few patients made a request for their discharge to be considered. None of these are sufficiently well to be outwith institutional care meantime.

The Statutory Registers are accurately kept.

JAMES P. STURROCK,

Commissioner, General Board of Control.

It is with deep regret that one has to refer to the death of Dr. H. de M. Alexander, who was Medical Superintendent of Kingseat Mental Hospital for the long period of 25 years. During that period, Dr. Alexander was instrumental

in bringing about many changes in the treatment of the mentally afflicted. He was held in high esteem by the Parish Council, and, during the short period in which he was a servant of the Town Council, the members of the Council learned to repose the same confidence and trust in his zeal and ability as did their predecessors. By his death, the public health service has lost an able and distinguished official whose work was always characterised by enthusiasm and upright sincerity.

2. The Treatment of Mental Defectives.

One of the most difficult problems facing every Local Authority is the provision of institutional treatment for mental defectives. In this connection, no single Local Authority can stand alone. A suitable institution for the reception of mental defectives can only be provided if several Local Authorities combine for the purpose of erecting a new institution or of reconstructing an existing institution.

There are 3 groups of mental defectives—(1) the feeble-minded who are educable; (2) imbeciles who are ineducable; and (3) idiots who are also ineducable.

Until 15th May, 1930, Education Authorities provided for the education of the feeble-minded. The mental defectives coming within Groups 2 and 3 were automatically handed over by the Education Authorities to the Parish Councils of the areas to which the patients were chargeable, and it will not be denied that in a very large proportion of cases the Parish Councils evaded their responsibility and did nothing.

It will, therefore, be seen that any scheme for the institutional accommodation and training of mental defectives must, for economic, if for no other, reason, be arranged on a regional basis. This part of the country is very deficient in its institutional provision for defectives, but the inadequacy of accommodation is not more marked here than in any other areas in Scotland.

With regard to the educable mental defectives, only moderately adequate provision has been made, and the main difficulty arises in connection with the ineducable defectives. The compulsory isolation of all ineducable defectives is unjustifiable, as many of them can be quite satisfactorily treated at home; it is only in those cases in whom perversions of various kinds exist or where the home conditions are unsatisfactory that compulsory segregation should be resorted to.

3. Prophylaxis in connection with Mental Diseases.

In any scheme of preventive medicine, the functions of the mental hospital lie more outside the hospital than within it. The patients admitted to mental hospitals are far beyond the state of prevention, and the Local Authority will ultimately undertake extramural activities of an educational, research, social and therapeutic nature. It will ultimately be necessary to establish a neurological and psychiatric clinic for the prevention and treatment of nervous diseases in their earliest stages, and it would appear that the best location for this clinic would be either the present out-patient department of the Aberdeen Royal

Infirmery, or Woodend Hospital, and associated with the clinic there would require to be an adequacy of observation beds.

PORT SANITARY SERVICES.

Trade and Shipping.

The total foreign and coastwise shipping entering the Port during 1930 was 21,745 vessels, of which 1,612 were foreign. The total tonnage of all vessels was 2,298,610, of which 386,772 was foreign.

The British ports with which Aberdeen trades mostly include Blyth, Dundee, Grangemouth, Granton, Hull, Leith, Liverpool, London, Middlesbrough, Newcastle, Seaham, Shields, Sunderland, Tyne, Wick, and ports in the Orkney and Shetland Islands.

The foreign ports with which Aberdeen has most trade include Antwerp, Archangel, Drammen, Gothenburg, Hamburg, Karlshamm, Larvik, New York, Oslo, Riga, Rotterdam, and North African ports.

The principal imports to Aberdeen are of the following nature, viz.:—Cement, coals, esparto grass, fish, flax, flour, granite, hemp, iron, jute, linseed and rape seed, maize, oilcake, oils, phosphates, salts, wood, wood pulp, and cattle, pigs, and sheep.

The principal exports are as follows:—Fish, flour, granite, hides and skins, jute (manufactured), manure (manufactured), oatmeal, oats, oilcake, oils, paper and paper boxes, pitch, preserved provisions, soap, and cattle, pigs, and sheep,

Medical Inspection of Shipping.

The amount of shipping entering the Port during the year, distinguished as foreign and coastwise, together with the number of ships inspected and the nature of the defects and the number of notices issued in connection therewith, are set forth in the following table:—

		Number of Vessels	Tonnage of Vessels	NUMBER INSPECTED		Number reported to be Defective	Number of Notices issued
				By the Medical Officer of Health	By the Sanitary Inspector		
Foreign—	Steamers	321	275,112	29	251	11	11
	Motor	22	3 778	...	13	...	...
	Sailing	1	102	...	1	...	...
	Fishing	1,268	107,780	...	7	...	...
Total Foreign		1,612	386,772	29	272	11	11
Coastwise—	Steamers	2,147	660,219	...	81	5	5
	Motor	19	5 172	...	4	...	...
	Sailing	0	0	...	0	...	...
	Fishing	17,967	1,246,447	...	2	2	2
Total Coastwise		20,133	1 911,838	...	87	7	7
Total Foreign and Coastwise .		21,745	2 298,610	29	359	18	18

It will be seen that of the 21,745 vessels entering the Port, 19,235 were fishing vessels. In general, it may be said that the danger of fishing vessels importing infectious disease is largely confined to vessels from English or German ports introducing small-pox or other infectious diseases from these countries. The main sanitary control of fishing vessels has reference to remedying sanitary defects and verminous conditions. Arrangements have been made whereby the sanitary control of fishing vessels will be extended with special reference to dealing with verminous conditions.

One seaman, suffering from scarlet fever, was admitted to hospital for treatment in 1930, and the necessary disinfection was carried out in connection with the vessel.

Rat Destruction—Precautions against Plague.

Trapping of rats within the area of the Harbour Commissioners is regularly carried out, and these rats are submitted to laboratory examination for plague. In all, 82 rats were thus examined in Aberdeen during 1930, but no laboratory evidence of plague infection in the rats was obtained.

The following measure of work on rat destruction carried out by the two whole-time rat-catchers of the Health Department is submitted:—

Number of pieces of poison bait laid	...	...	128,073
Number of pieces of poison bait eaten	...	...	39,168
Dry poison bait (mice) laid	...	...	310 pieces
Dry poison bait (mice) eaten	...	...	13 pieces

In addition, liquid poison in the form of red squills was sold by the Health Department to occupiers of business premises and dwelling-houses within the City. The quantity sold amounted to about 23 gallons, sufficient for the making up of 13,800 baits.

One ship, S. D. "Scots Craig," arrived in Aberdeen on 9th November, 1930, from Alexandria, a plague-infected port. No evidence was obtained that the ship was rat-infested.

Under the Public Health (Deratisation of Ships) Regulations (Scotland), 1929, 169 ships were inspected during the year, and 11 Deratisation exemption Certificates were issued.

VETERINARY SERVICES.

The activities of the Health Department that are subject for discussion under "Veterinary Services" relate mainly to the control of food supplies.

Milk Control.

Certified Milk.

In 1930, ten firms of milk retailers had their licences to retail Certified Milk renewed, while four firms of milk retailers were licensed,

Pasteurised Milk.

Applications were made on behalf of Northern Co-operative Society, Limited, for a licence to pasteurise milk in their premises at Berryden Road, and for Dealers' Licences to sell pasteurised milk in 32 branch shops belonging to the Society. Seven applications were also received from other retailers. The applications were granted for the year.

Market Milk.

In 1930, 200 milk samples were examined for the presence of tubercle bacilli, and reference to the accompanying table shows that tubercle bacilli were present in 15 of the samples, or 7.5 per cent. Of 65 samples examined in 1929, 3.1 per cent. contained tubercle bacilli; and of 90 samples examined in 1928, 6.7 per cent. contained tubercle bacilli. As regards the general bacterial examination of market milk, a total of 36 samples were examined during 1930, and the table shows that 23 of these samples, or 64 per cent., as compared with 72 per cent. in 1924, did not contain more than 200,000 organisms per cubic centimetre.

Bacteriological Examination of Milk Samples.

Year	TUBERCOLE			GENERAL BACTERIA—No. in 1 c.c.							
	No.	Pos.	Per Cent. Pos.	No.	Not exceeding						Exceeding
					10,000	50,000	100,000	200,000	1,000,000	5,000,000	
1930	200	15	7.5	36	1	3	10	9	9	3	1
1929	65	2	3.1	66	13	22	13	7	3	3	5
1928	90	6	6.7	90	8	38	17	12	3	9	3
1927	108	9	8.3	106	16	44	12	15	14	2	3
1926	90	7	7.8	108	15	38	12	14	16	8	5
1925	132	4	3.0	171	27	67	31	17	21	7	1
Aver. 1925-29	97	6	5.8	108	16	42	17	13	11	6	3

Dairy Herds.

The number of dairy herds in the City was 14 in 1930, as compared with 15 in the previous year. The average number of cows was 130. Most of the premises have been kept in a satisfactory condition. Under the Tuberculosis Order, 1925, no cases have been discovered or reported.

Eradication of Bovine Tuberculosis.

At a meeting of the Town Council on 8th August, 1930, a copy of a Scheme for the Eradication of Bovine Tuberculosis, prepared by the Scottish branch of the National Veterinary Medical Association, was submitted. The matter was remitted to the Veterinary Officer, who submitted the following Report to the Public Health Committee.

Aberdeen—8th September, 1930.

Gentlemen,

I beg to submit the following report on the Scheme for the eradication of Bovine Tuberculosis, as presented by the Scottish Branch of the National Veterinary Medical Association, which is representative of Veterinary opinion in Scotland.

Schemes for the eradication of bovine tuberculosis in this country have often been discussed, but never before has a scheme been definitely put on paper for circulation and such efforts made to convince members of parliament, local authorities, stock owners, and government departments of the need for attempts being made in the eradication of bovine tuberculosis and for the adoption of this scheme or some modification of it.

The attempt to eradicate tuberculosis from our herds is suggested in view of the serious losses incurred to stockowners by the disease and on account of its bearing on public health.

There are two recognised methods of tackling tuberculosis in stock with a view to its eradication.

- I. The American method in which eradication is carried out by the wholesale employment of tuberculin in the testing of stock and the slaughter of all re-actors.
- II. The Bang method as adopted in Denmark and elsewhere by which stock is isolated at birth, kept clear of all possible infection and herds free from tuberculosis gradually built up from such stock.

In view of the probable high percentage of re-actors in British herds, it appears impracticable to apply the American method immediately in an extensive campaign in this country. The Scottish Branch, therefore, suggests a combination of the American and Bang methods. First, it is proposed to establish *accredited herds*. These would be started on application being received from owners that they wished their herds to be cleared of the disease and would naturally be herds in which the incidence of the disease is believed to be low, or self-supporting herds, i.e., herds which are kept up almost entirely by breeding from the stock on the farm, or pedigree and milk recorded herds. The aim of establishing such accredited herds would be to form a nucleus for the supply of tubercle free cattle.

From such established accredited herds the aim would be to build up *accredited areas*; so that in time we should have areas free from the disease, more or less self-supporting, and thereby lessen the risk of infection to herds within that area.

On the establishment of a certain number of accredited areas within a district, it would be necessary for the complete protection of such areas to have *compulsory areas*, i.e., stock-owners within a reasonable distance of accredited areas would be compelled to have their herds clear of the disease, and so, as the scheme suggests, the whole country would be gradually freed from tuberculosis in stock.

It is not proposed that the scheme should be made applicable immediately to the whole country, but that it might as it were be "tried out" in some special district such as a large island. The scheme is certainly a good one and well worthy of discussion, but it is doubtful if the country is yet ready for it. The cost would be high and would have to be met by Government grants. To my mind, due consideration has not been given to the needs of different districts. For example, our own district depends almost entirely for its dairy stock, at any rate, on imported cattle, chiefly Irish, and before we could adopt such a scheme for the eradication of tuberculosis, there would need to be an almost entire change in the methods of farming in the North of Scotland, or, in other words, the district would have to become practically self-supporting with regard to its stock. At the same time, there are districts in Scotland where the scheme could be tried, for example in Ayrshire, which is almost entirely a dairying county and practically self-supporting as far as its stock is concerned.

Another aspect of the question which we must bear in mind is the possibility of success in the vaccination of our herds against tuberculosis by the Bacillus-Calmette-Guerin Vaccine.

The use of this vaccine is still in the experimental stage, but results have been obtained which justify a reasonable expectation of some success. The adoption and use of such a vaccine would be very inexpensive compared with such a scheme of eradication as the one discussed.

My suggestion is that whilst we recognise the excellence of the scheme, we do not think that the time is opportune for its immediate adoption.

J. McALLAN,

Veterinary Officer.

The Public Health Committee approved the Report, and recommended that the Council should adopt the suggestion of the Veterinary Officer.

Meat Control.

Meat Inspection.

There are four private slaughter-houses in operation within the Burgh, and two of these belong to the Flesher Incorporation. As has been pointed out in preceding Reports, it is impossible to secure adequate inspection of meat in four widely separated slaughter-houses.

The number and class of animals killed in the slaughter-houses during the year were as follows:—

Cattle					Sheep		Pigs
Oxen	Heifers	Cows	Bulls	Calves	Sheep	Lambs	
28,427	22,403	355	614	7	96,860	3,712	2,523

The following table gives the number of carcasses inspected and the weight of meat seized as unfit for human food in these slaughter-houses during the year:—

	Oxen	Bulls	Cows	Heifers	Calves	Sheep	Pigs
Number of carcasses inspected, .	*	614	355	*	7	*	2,523
Number of carcasses seized wholly—							
(1) For tuberculosis, . . .	71	2	60	92	1	0	13
(2) For other diseases, . . .	12	0	49	8	6	81	30
Number of carcasses of which portions were seized—							
(1) For tuberculosis, . . .	158	4	30	158	0	0	53
(2) For other diseases, . . .	28	2	53	22	3	12	25
Total weight of meat seized, .	103,989 lbs.	2,428 lbs.	74,486 lbs.	108,114 lbs.	600 lbs.	3,713 lbs.	7,593 lbs.

* Accurate figures as to the number of oxen, heifer, and sheep carcasses inspected are not available. Every ox, heifer, or sheep carcass showing evidence of disease is, of course, thoroughly examined, and all carcasses of bulls, cows, calves, and pigs are inspected.

Particulars are given on following page regarding the carcasses seized wholly for diseases other than tuberculosis:—

Disease	Oxen	Bulls	Cows	Heifers	Calves	Sheep	Pigs
Melanosis . . . . .	...	...	...	1	...	...	...
Neoplasms . . . . .	...	...	1	...	...	2	...
Septicæmia	2	...	2	...	1	2	...
Septic Mammitis . . . . .	...	...	2	...	...	6	1
Septic Metritis . . . . .	...	...	4	...	...	1	...
Septic Pericarditis . . . . .	...	...	7	...	...	2	2
Septic Peritonitis	2	...	3	1	1	2	2
Pneumonia	3	...	4	4	1	...	1
Dropsy . . . . .	...	...	5	1	...	17	...
Swine Fever . . . . .	...	...	...	...	...	...	18
Enteritis	1	...	...	...	1	...	...
Decomposition	1	...	4	...	...	32	3
Extensive bruising . . . . .	...	...	7	...	...	15	1
Fevered or badly bled	2	...	8	1	...	...	1
Abnormal odour and various inflammatory conditions, &c., chiefly in emergency slaughter	1	...	2	...	2	2	1
Total	12	...	49	8	6	81	30

There are two large wholesale meat marts in Aberdeen to which carcasses are consigned from County districts. As a routine all such carcasses are inspected by the Meat Inspector in Aberdeen, and the following table gives the number of carcasses and the weight of meat seized as unfit for human food in these marts:—

	Oxen	Bulls	Cows	Heifers	Calves	Sheep	Pigs
Number of carcasses seized wholly—							
(1) For tuberculosis, . . .	10	0	8	15	0	0	6
(2) For other diseases, . .	16	3	24	17	2	135	15
Number of carcasses of which portions were seized—							
(1) For tuberculosis, . . .	50	0	4	3	0	0	4
(2) For other diseases, . .	25	1	22	11	0	148	8
Total weight of meat seized, .	12,691 lbs.	2,403 lbs.	18,443 lbs.	13,608 lbs.	98 lbs.	6,208 lbs.	3,857 lbs.

Every seizure made was by consent of the owner of the unfit food and on no occasion were legal proceedings with regard to unfit food necessary.

Slaughter of Animals (Scotland) Act, 1928.

This Act, as applying to cattle, came into force on 1st January, 1930, and to sheep on 1st October, 1930. On the whole, the operation of the Act has been very satisfactory, although several prosecutions, relating principally to sheep, have been made, and fines up to £3 have been imposed. The Local Authority recommended the adoption of an instrument of the Captive Bolt type, and that was readily adopted by all the butchers in the town.

During the year, 79 licences were issued for the use of the mechanically-operated instrument.

Control of other Foods.

In addition to the control of milk and milk food products, and of meat, the Health Department continues an extensive supervision of other foods. Thus, the Fish Market is visited daily, and the quantity of fish destroyed as unfit for human food in 1930, was 11,948 lbs., as compared with 43,686 lbs. in 1929. The sale of fruit and vegetables, both wholesale and retail, is also under intensive supervision. So also considerable attention continues to be paid to the inspection of tinned foods, and all factories where such articles are prepared are regularly visited. Provision curing yards, wholesale warehouses, and shops are also subject to routine visitation.

LABORATORY SERVICES.

The existing laboratories at the City Hospital were originally provided and extended to meet only the requirements of the hospital. In 1920, the whole of the bacteriological work of the City of Aberdeen was transferred to these laboratories, and several Counties and Burghs in the North-east made arrangements whereby their bacteriological work was performed in the municipal laboratories. In 1923, the Town Council appointed a whole-time Chemist and City Analyst, and accommodation for him had to be provided within the existing laboratories, which are situated on the upper floor of the Tuberculosis Institute, the lower floor being reserved for the Tuberculosis and X-ray Departments. At the time of the Analyst's appointment it was foreshadowed that, in view of developments in investigating nutritional problems, the appointment of a whole-time Nutritional Expert, with medical in addition to the necessary chemical training, should be considered on an early date.

The Bacteriological and Chemical Laboratories are unduly cramped. New accommodation is urgently required, either by the erection of a new laboratory or by the removal of the Tuberculosis and X-ray Departments from their present site to the ground floor of the old Nurses' Home, part of which has been rendered available through the opening of the newly-opened Nurses' Home.

The following statement gives in detail the number and results of examinations for the City of Aberdeen (including City Hospital and Woodend Hospital) during the year 1930 :—

LABORATORY EXAMINATIONS FOR THE CITY OF ABERDEEN.				
	Positive	Negative	Total	Grand Total
<i>Diphtheria</i> —	1,190	10,151	11,341	11,341
<i>Tuberculosis</i> —				
Sputum,	870	2,315	3,185	
Pus,	2	43	45	
Fæces,	6	32	38	
Urines,	9	261	270	
Cerebro-spinal fluids,	12	31	43	
Pleural fluids	0	8	8	
			—	3,589
				—
		Carry forward,		14,930

	Positive	Negative	Total	Grand Total
	Brought forward, .		.	14,930
<i>Typhoid—</i>				
Widals,	16	70	86	
Blood Cultures,	4	52	56	
Fæces,	23	89	112	
Urines,	30	91	121	
			—	375
<i>Paratyphoid A and B—</i>				
Widals	23	184	207	
Blood Cultures,	3	10	13	
Fæces,	31	47	78	
Urines,	14	62	76	
			—	374
<i>Bacillary Dysentery—</i>				
Agglutination	37	26	63	
Fæces,	144	744	888	
			—	951
<i>Food Poisoning—</i>				
Blood Culture,	0	1	1	
Fæces,	4	7	11	
Urines,	0	2	2	
Food,	0	1	1	
Micc,	0	13	13	
			—	28
<i>Venereal Diseases—</i>				
Wassermann Tests,	517	1,954	2,471	
Kahn Tests,	485	1,781	2,266	
Gonococcal Examinations,	300	2,709	3,009	
Spirochaetes	1	14	15	
			—	7,761
<i>Epidemic Cerebro-spinal Meningitis—</i>				
Cerebro-spinal fluids,	24	4	28	28
<i>Puerperal Fever—</i>				
Blood Cultures,	23	133	156	
Pus,	76	103	179	
			—	335
<i>Undulant Fever—</i>				
Agglutination,	11	153	164	
Fæces,	1	1	2	
			—	166
<i>General—</i>				
Blood Counts,			100	
Differential Cell counts, etc.,			199	
Blood Cultures (various),			78	
Cervical swabs for <i>S. hæmolyticus</i> ,			41	
Fæces for Organisms,			60	
Fæces for Protozoal Exam.,			21	
			—	
	Carry forward, .		.	24,948

	Positive	Negative	Total	Grand Total
<i>General (continued) -</i>	Brought forward, .			24,948
Malaria,	1	14	15	
Histological Specimens,			92	
Ophthalmia Neonatorum,	14	136	150	
Pus for Organisms,			561	
Cerebro-spinal fluids,			121	
Sputum for Organisms,			295	
Throat, Nose, and Ear Swabs,			984	
Urines for Bacteriological Exam.,			472	
Urines for General Path. Exam.,			3,658	
Vaccines,			226	
Pleural Fluids,			48	
Autopsies,			22	
Precipitation test for Smallpox			7	
Miscellaneous,			14	
<i>Animal Specimens—</i>			—	7,164
Rats examined for Leptospira Ictero-hæmorrhagica		7	30	37
<i>Biochemical Examination—</i>				
Blood Sugar,			116	
Urinary Sugar,			797	
Blood Urea,			97	
Urine Urea,			104	
Urine Chlorides,			6	
Fæces for Blood,			30	
Gastric Contents,			9	
Test Meals			110	
Miscellaneous,			23	
<i>Water, Food, and Drug Samples—</i>			—	1,292
Bacteriological Examination of Waters,			277	
Chemical Examination of Waters,			7	
Bacteriological Examination of Milks,			205	
All samples analysed under the Sale of Food and Drugs Acts and Public Health Regulations,			1,411	
<i>Animal Experiments—</i>			—	1,900
Guinea-pigs inoculated with milk deposits for T.B.			386	
Guinea-pigs inoculated with human material for T.B.			27	
Do. do. milk deposits for B. abortus,			47	
Do. do. blood and urine for B. abortus,			6	
Do. do. blood, urine, etc., for Leptospira Hæmorrhagica			37	
Do. used for diphtheria virulence tests,			6	
Mice used in typing pneumococci,			33	
			—	542
				35,883

In addition to the above examinations for the City of Aberdeen, 6,086 examinations were carried out for the North-Eastern Counties within the Laboratory Services Scheme.

CHAPTER VI.

STATISTICAL COMMENTARY.

POPULATION.

The population of the City (including the inmates of Parish Hospital and Kingseat Mental Hospital chargeable to Aberdeen) at the middle of the year was 159,006. The estimate is based on the census population for 1921; and the subsequent increase or decline is calculated by adding the excess of births over deaths and adding or subtracting the loss or gain of population due to emigration and immigration.

The accompanying table gives the percentage and number of population at each of the principal age-periods.

TABLE XXVI.—ABERDEEN.—POPULATION AT VARIOUS AGE-PERIODS—1930.
(As estimated from Proportions at Census of 1921.)

	Under 1 year	1 and under 5 years	5 and under 15 years	15 and under 25 years	25 and under 45 years	45 and under 65 years	65 years and upwards	ALL AGES
Percentage of Population at each Age (according to Census) . 1911	2·23	9·03	22·13	19·13	26·84	15·31	5·33	...
1921	2·35	6·66	19·41	20·00	27·00	18·42	6·16	...
Estimated Population at each Age-Period in 1930	3,737	10,590	30 863	31,801	42,931	29,289	9,795	159,006

BIRTHS.

(Table XXVII.).

The total number of births during the year 1930, corrected for transfers, was 3,303 (3,014 legitimate and 289 illegitimate), equivalent to a rate of 20.8 per 1,000 of the population, as against a rate of 19.6 per 1,000 in 1929. The average rate for the 1925-1929 quinquennium was 20.6.

Proportion of Males to Females.—The number of male infants to every 100 female infants, corrected for transfers, during 1930 was 104, as compared with 112 for 1929.

Illegitimate Births.—In 1930, the number of illegitimate births, after correction for transfers, was 289, and amounted to 8.7 per cent. of the total births. The average rate for the 1925-1929 quinquennium was 7.9.

Births in Proportion to Women of Child-bearing Ages (15-45 years).—When the births are compared with the number of women of fertile ages in the population, it is found that the number of legitimate births among married women in 1930 amounted to 176 per 1,000 of such women at the ages specified. In 1929, the rate was 166.

Similarly stated, the illegitimate birth-rate among unmarried and widowed women of the fertile ages was 12.1 per 1,000 in 1930. In 1929, it was 11.7.

Still-births.—In 1930, the number of still-births was 163, and amounted to 47 per 1,000 registered births. In 1929, the rate was 42.

MARRIAGES.

(Table XXVII.).

During the year 1930, there were 1,557 marriages within the City, equivalent to a rate of 9.8 per 1,000 of the population, being the same rate as in 1929. The average rate for the 1925-1929 quinquennium was 9.5.

Residence.—In 1930, 1,099 of the males married were ordinarily resident in Aberdeen, the remaining 458 coming from outwith the City. As regards the females, 1,308 were ordinarily resident in the City, and 349 lived outside the City.

Status.—In the 1,557 marriages in 1930, the persons married included 153 widowers and 66 widows.

TABLE XXVII.—ABERDEEN.—MARRIAGE, BIRTH, AND DEATH-RATES—1856 TO 1930
Per 1,000 of population.

Year.	Population.	Marriages.		Births. *			Deaths. †			Excess of Birth-Rate over Death-Rate
		Number.	Rate per 1,000 of Population.	Number.	Rate per 1,000 of Population.	Illegit. Births per 100 Total Births.	Number.	Rate per 1,000 of Population.	Average Age at Death.	
1930	159,006	1,557	9·8	3,303	20·8	8·7	2,083	13·1	50·0	7·7
1929	158,970	1,558	9·8	3,112	19·6	9·0	2,422	15·2	50·3	4·4
1928	159,954	1,531	9·6	3,314	20·7	8·8	2,237	14·0	48·2	6·7
1927	159,168	1,502	9·5	3,182	20·0	7·5	2,180	13·7	49·1	6·2
1926	158,723	1,403	8·9	3,406	21·5	7·0	2,115	13·3	48·0	8·2
1925	158,144	1,519	9·6	3,390	21·4	7·4	2,170	13·7	46·5	7·7
Mean of 1925-1929	158,992	1,503	9·5	3,281	20·6	7·9	2,225	14·0	48·4	6·6
1924	157,764	1,459	9·2	3,437	21·8	7·2	2,302	14·6	44·7	7·2
1923	159,498	1,564	9·8	3,766	23·6	7·7	2,157	13·5	45·1	10·1
1922	160,308	1,616	10·1	3,969	24·8	9·7	2,595	16·2	41·5	8·6
1921	159,915	1,751	10·9	4,254	26·6	9·2	2,292	14·3	44·1	12·3
1920	160,466	2,122	13·2	4,868	30·3	9·3	2,398	14·9	40·1	15·4
Mean of 1920-1924	159,590	1,702	10·6	4,059	25·4	8·6	2,349	14·7	43·1	10·7
1916-1920	161,568	1,754	10·9	3,479	21·5	10·6	2,439	15·1	41·7	6·5
1911-1915	164,324	1,489	9·1	3,959	24·1	10·2	2,752	16·8	38·1	7·4
1906-1910	163,620	1,360	8·3	4,505	27·5	9·7	2,512	15·4	37·6	12·2
1901-1905	158,082	1,428	9·0	4,872	30·8	8·5	2,763	17·5	34·9	13·3
1896-1900	145,740	1,356	9·3	4,636	31·8	8·3	2,644	18·1	33·3	13·7
1891-1895	131,627	1,099	8·4	4,114	31·3	9·8	2,539	19·3	32·9	12·0
1886-1890	117,587	911	7·8	3,827	32·5	10·4	2,370	20·2	...	12·3
1881-1885	108,959	848	7·8	3,712	34·1	10·6	2,159	19·8	...	14·3
1876-1880	100,419	788	7·9	3,480	34·7	10·9	2,100	20·9	...	13·8
1871-1875	91,941	705	7·7	3,169	34·5	12·1	2,063	22·4	...	12·1
1866-1870	84,234	684	8·1	3,010	35·7	12·9	1,978	23·5	...	12·2
1861-1865	77,040	624	8·1	2,663	34·6	...	1,915	24·9	...	9·7
1856-1860	73,458	524	7·1	2,397	32·6	...	1,772	24·1	...	8·5

* Corrected for transferred births for 1911 and subsequent years.

† Corrected for transferred deaths for 1904 and subsequent years.

DEATHS.

(Table XXVII.).

The total number of deaths during 1930, corrected for transfers, was 2,083, equivalent to a death-rate of 13.1 per 1,000 of the population. This is the lowest death-rate yet recorded. For the quinquennium 1925-1929, the average annual number of deaths was 2,225, with a rate of 14.0.

The Average Age at Death of all persons dying during 1930 was 50.0 years. In the 1925-1929 quinquennium, it was 48.4 years.

Excess of Birth-Rate over Death-Rate.—In Table XXVII. will be found a column giving the excess of the birth-rate over the death-rate since the commencement of registration. The excess in 1930 was 7.7. For the quinquennium 1925-1929, the excess was 6.6. The usual excess of birth-rate over death-rate for many years prior to 1911 was about 11 to 14.

ANALYSIS OF THE DEATH-RATE.

Mortality in Relation to Age and Causes (Tables XIX., XXVIII. and XXIX.).

Infant Mortality.—This is dealt with in detail in the section of this Report relating to Maternity and Child Welfare Services.

Mortality at Pre-School Age Period (1 to 5 years), excluding Infant Period Tables XIX., XXVIII. and XXIX.).—The number of deaths at this age-period was 85, equivalent to a death-rate of 8.0 per 1,000 of the population at this age, as compared with an average of 13.9 in the preceding ten years.

Mortality at School Age-Period (5 to 15 years) (Tables XXVIII. and XXIX.).—The deaths at this age-period amounted to 59, or 1.9 per 1,000 of population at this age, being the same as the average rate for the preceding decennium.

Mortality at Adolescent Age-Period (15 to 25 years) (Tables XXVIII. and XXIX.).—The deaths at this age-period were 60, or 1.9 per 1,000 of the population, as compared with an average rate of 2.7 for the preceding ten years.

Mortality at Early-Mature Age-Period 25 to 45 years) (Tables XXVIII. and XXIX.).—The number of deaths at this age-period was 196, giving a rate of 4.6 per 1,000 of the population. The rate for the preceding decennium was 5.3.

Mortality at Post-Mature Age-Period (45 to 65 years) (Tables XXVIII. and XXIX.).—The deaths amounted to 509, with a rate of 17.4 per 1,000 of the population at this period, as compared with an average rate of 16.4 for the preceding decennium.

TABLE XXVIII.—ABERDEEN.—MORTALITY FROM ALL CAUSES AT VARIOUS AGE-PERIODS *
(per 1,000 of population at each age).

Year.	INFANTILE MORTALITY. Deaths of Infants under 1 year per 1,000 Births.	AGE PERIOD.						All Ages.
		0—5 years. (Pre-School Period.)	5—15 years. (School Period.)	15—25 years. (Adolescent Period.)	25—45 years. (Early Mature Period.)	45—65 years. (Late Mature Period.)	65 years and upwards (Post-mature Period.)	
1930 . .	80	24·4	1·9	1·9	4·6	17·4	92·8	13·1
1929 . .	95	28·6	1·8	2·9	5·1	18·6	112·5	15·2
1928 . .	94	31·6	1·7	2·4	5·2	16·4	95·9	14·0
1927 . .	105	30·4	1·9	1·7	4·4	17·1	96·1	13·7
1926 . .	96	30·3	2·1	2·4	4·6	15·9	89·9	13·3
1925 . .	109	35·9	1·7	2·3	5·8	14·5	88·9	13·7
Mean of 1925-1929 (Five years).	100	31·4	1·8	2·3	5·0	16·5	96·7	14·0
1924 . .	122	44·2	1·5	2·6	4·8	15·4	91·7	14·6
1923 . .	104	38·1	1·3	2·8	4·9	15·6	82·7	13·5
1922 . .	133	56·1	2·0	2·8	5·9	17·4	87·4	16·2
1921 . .	108	37·5	2·4	3·6	5·9	16·9	82·2	14·3
1920 . .	121	49·6	2·2	3·8	6·7	16·1	73·6	14·9
Mean of 1920-1924 (Five years)	118	45·1	1·9	3·1	5·6	16·3	83·5	14·7
1916-1920 .	127	41·0	2·9	4·0	6·8	17·4	82·8	15·1
1911-1915 .	143	49·7	4·0	4·1	6·7	20·0	86·5	16·8
1906-1910 .	128	42·5	2·9	3·5	7·0	19·5	84·2	15·4
1901-1905 .	143	52·2	3·1	4·6	7·4	21·3	83·3	17·1
1896-1900 .	144	54·2	3·4	5·0	9·2	22·2	81·6	18·1
1891-1895 .	147	57·5	4·5	5·8	9·3	22·7	86·5	19·3
1886-1890 .	140	52·9	4·8	7·0	10·5	22·9	88·1	20·2
1881-1885 .	126	50·9	5·4	6·4	10·1	23·8	86·3	19·8
1876-1880 .	129	53·1	6·2	7·7	11·3	22·1	86·6	20·9
1871-1875 .	133	57·5	7·7	8·2	12·0	22·6	91·5	22·4
1866-1870 .	133	68·0	7·2	8·9	12·4	22·2	91·2	23·5
1861-1865 .	130	68·9	8·1	10·5	13·4	24·7	98·7	24·9
1856-1860 .	126	67·8	9·3	9·8	12·6	21·8	97·5	24·1

* Corrected for transferred deaths in 1904 and subsequent years.

TABLE XXIX.—ABERDEEN.—MORTALITY AT VARIOUS AGE-PERIODS FROM VARIOUS CAUSES.
(Corrected for transferred deaths.)

AGE.	ALL CAUSES.	Zymotic Diseases.			Tuber- culous Diseases.		Respiratory Diseases.			Diseases of Circulatory System.	Diseases of Genito- Urinary System.	Nervous Diseases.		Dis. of Digest. Syst. incl. Diarrhoea.	Malignant Diseases.	Developmental Diseases (Ex. old age).	Accident and Violence.	Debility, Atrophy, Inanition.		Miscellaneous.	
		Ordinary.	Venereal.	Septic.	Respiratory.	Other Tuberculous.	Pneumonia.	Bronchitis.	Other Respiratory.			Convulsions.	Other Nervous.					Under age of 1 year.	Above age of 65 years.		
A.—NUMBER OF DEATHS—YEAR 1930.																					
Under 1 year,	265	27	0	8	0	3	55	14	2	0	0	0	12	4	17	0	72	8	32	...	11
1—5 years,	85	23	0	0	2	12	15	3	1	0	5	1	0	3	5	0	1	13	...	...	1
5—15 „	59	9	0	2	5	6	3	0	2	2	2	0	0	5	9	2	0	8	...	...	4
15—25 „	60	0	0	1	11	3	5	0	1	6	0	3	0	4	11	2	0	11	...	...	2
25—45 „	196	2	0	1	37	3	9	5	0	23	18	8	0	12	20	23	0	15	...	...	20
45—65 „	509	8	1	2	25	7	26	16	10	104	47	73	0	15	28	99	0	24	...	...	24
65+ „	909	1	0	7	5	0	45	41	14	294	40	181	0	5	38	116	0	22	...	71	29
ALL AGES.	2083	70	1	21	85	34	158	79	30	429	112	266	12	48	128	242	73	101	32	71	91
B.—DEATH-RATE PER 100,000 OF POPULATION AT EACH AGE—YEAR 1930.																					
Under 1 year,	7091	723	0	214	0	80	1472	375	51	0	0	0	321	107	455	0	1927	214	856	...	295
1—5 years,	803	217	0	0	19	113	142	28	9	0	47	9	0	28	47	0	9	123	...	...	9
5—15 „	191	29	0	6	16	19	10	0	6	6	6	0	0	16	29	6	0	26	...	...	13
15—25 „	188	0	0	3	35	9	16	0	3	19	0	9	0	12	35	6	0	35	...	...	6
25—45 „	457	5	0	2	86	7	21	12	0	54	42	19	0	28	46	54	0	35	...	...	47
45—65 „	1738	27	3	7	85	24	89	55	34	355	160	249	0	51	96	338	0	82	...	...	82
65+ „	9280	10	0	71	51	0	459	419	143	3062	408	1848	0	51	388	1184	0	225	...	725	296
ALL AGES.	1310	44	1	13	53	21	99	50	19	270	70	167	7	30	81	152	46	64	...	...	57
C.—DEATH-RATE PER 100,000 OF POPULATION AT EACH AGE—AVERAGE FOR TEN YEARS—1920-1929.																					
Under 1 year,	10767	906	216	91	32	209	1402	737	67	24	11	19	575	150	1015	3	2897	131	1920	...	353
1—5 years,	1385	524	2	9	18	180	268	44	13	4	10	0	32	40	76	5	16	108	...	...	37
5—15 „	185	43	0	2	9	18	11	3	3	15	5	0	3	0	11	18	0	3	23	...	14
15—25 „	273	8	0	3	2	85	13	2	5	21	8	2	0	19	20	6	0	3	29	...	32
25—45 „	531	21	3	6	136	13	36	6	5	55	28	10	0	31	32	46	0	2	42	...	62
45—65 „	1637	42	5	10	106	13	87	58	26	296	117	193	0	67	100	334	0	74	...	108	
65+ „	9000	199	8	29	71	12	333	713	163	2219	447	1543	0	126	302	1111	0	214	...	1215	294
ALL AGES.	1435	92	7	9	81	33	102	78	20	214	60	135	16	41	82	144	70	59	...	...	85

Mortality at Post-Mature Age-Period (65 years and upwards) (Tables XXVIII. and XXIX.).—The deaths amounted to 909, with an equivalent rate of 92.8 per 1,000 of the population, as compared with an average rate of 90.0 for the 1920-1929 decennium.

Mortality at All Ages (Tables XXVII., XXVIII. and XXIX.).—The death-rate from all causes has already been referred to.

The percentage fall in the death-rate from the decade of 1861-1870 up to the end of 1930 is for each age-period as follows, namely:—64 for the pre-school (including the infant) period; 75 for the school period; 80 for the adolescent period; 64 for the early-mature period; 26 for the late-mature period; and 2 for the post-mature period.

During 1930, the diseases responsible for the largest number of deaths were as follows:—Diseases of the circulatory system, 429 deaths; diseases of the nervous system, 326 (including 266 due to cerebral haemorrhage); respiratory diseases, 267; malignant diseases, 242; tuberculous diseases, 119, of which 85 were respiratory; and zymotic diseases, 92.

VARIATIONS IN MORTALITY FROM SELECTED CAUSES SINCE 1856.

The variations in the mortality from selected causes at all ages since the year 1856—the second year of civil registration—can be conveniently followed in Table I.

Infectious Diseases.—These, including tuberculosis, are dealt with in greater detail in the part of the Report devoted especially to Infectious Diseases.

Cancer and other Malignant Diseases.—The cancer death-rate was 152 per 100,000 of the population in 1930, as compared with a rate of 170 in 1929. During the 1925-1929 quinquennium, the average rate was 150.

Pneumonia.—The death-rate from pneumonia was 99 per 100,000 of the population, as against an average of 100 during the 1925-1929 quinquennium.

Bronchitis, which has been an almost steadily declining cause of death since near the commencement of civil registration, gave a death-rate of 50 per 100,000 of the population, as compared with an average of 65 for the preceding quinquennium.

Diseases of the Digestive System.—In 1930, the death-rate was 81 per 100,000, as against an average of 82 in the 1925-1929 quinquennium.

Diseases of the Circulatory System.—The death-rate from these diseases was 270 per 100,000, as compared with an average of 235 for the preceding quinquennium. The increased mortality in 1930 was at the post-mature period.

